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BEHAVIORISM AND PSYCHOLOGY

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To

E. B. TITCHENER, D.Sc., Ph.D., LL.D., Litt.D.
Professor at Cornell University

AND

WM. McDOUGALL, M.B., F.R.S., D.Sc.
Professor at Harvard University

TWO PILLARS OF ANGLO-AMERICAN PSYCHOLOGY

PREFACE

This book, the writing of which was begun more than two years ago only to be interrupted for lengthy intervals, was originally planned as a short series of articles. I had no doubt at the time that sooner or later the whole behavioristic issue would be threshed out in book form, especially as the new movement in psychology had just about reached its peak in 1920. My own contribution to the discussion was to be merely the historical treatment and classification of the different species of behaviorism. Since, however, as I kept poring over the periodicals studying the ponderous articles with their animadversions on traditional psychology, the anticipated volume was not even promised, it occurred to me that the want might be filled through my own efforts.

That such a book is not out of season will be gathered from the recent letter of Prof. Hunter to the anti-behaviorists in which he asks "who are the behaviorists?"¹ and demands "a bibliography of this topic for the past decade." This exposition will perhaps convince him that there are more than two behaviorists, as he erroneously supposes, and

¹ W. S. Hunter: 'An Open Letter to Anti-Behaviorists'. *Journal of Philos.*, 1922, vol. XIX, p. 307.

that a controversy which is practically monopolizing the space of some periodicals would not be waged on account of two dissenters.

It is high time for such stock taking as Hunter implicitly proposes, and not only in the interest of psychology but theoretically, at least, on behalf of its rival as well. My aim, however, is not expository alone. It is primarily to counteract a tendency which is prone to warp the development of American psychology for some years and to cause its belittlement in other lands. What may be considered perhaps just as serious a process is the estrangement of the undergraduate from the psychological sphere and his initiation into the rites and mysteries of the much promising but little fulfilling order of behaviorists with their individualistic objectivism, pseudo-simplicity, and impressive lingo.

The American student is surely entitled to receive instruction in psychology when he registers for such a course instead of being required to wade through the quagmire of leavings from physiology and biology. There are at present many thousands of American students who would pay no attention to psychological writings which did not make ample use of such terms as "reaction-pattern", "reaction-system", "adjustment", "stimulus", "response" and all the rest of the stock-in-trade of the psychological radicals. It follows as a matter of course that books by foreign writers on psychological topics are to be tabooed as "old-fashioned" psy-

chology. In consequence it may be expected too that the isolated body of doctrine springing up in this country will be just as foreign to psychologists abroad, so that before long there would cease to be a psychological *rapprochement* between the United States and other countries.

I should not wish to be so pessimistic, but already there is an indication pointing in that direction, and though the late war is to some extent accountable for it, the rift is in large part due to the increasing insularity which American psychology has been taking on in the last few years. The present relapse, let us hope, is only a temporary scientific spree. Were it permanent with us, it would be futile for a handful of individuals to make an outcry against it. The fact, however, that its opponents have been either too dignified or too indolent to nip it in the bud has rendered the movement more secure and more attractive for proselytes.

Novelty is a great force in the spread of a doctrine, and the appearance of novelty which behaviorism has been flaunting imparted to many teachers of psychology the impulse of adding a brick to the new edifice. The most astounding facility with which theories are palmed off these days as constructive endeavors can be accounted for partly by the unfailing eagerness of the reading public to hear a new word, no matter how unreliable it might be, and partly as due to the fact that in the intellectual domain, it is much more difficult

to criticize intelligently, for criticism presupposes knowledge, than to turn out half-baked hypotheses that are unverifiable, and consequently, to a certain extent immune from rigorous scrutiny.

Let us remember, however, that it is more serviceable in the long run to expose flaws than to build on a faulty foundation. It was Hume's destructive philosophy that led to Kant's awakening "from his dogmatic slumber," and furthermore, it will probably be recognized more and more as time goes on that Kant's negative contribution to philosophy, for instance his refutation of the various arguments for the existence of God, is just as important as his positive structure; for he has helped to save the time and conserve the energy of many a philosopher who would still have been chasing metaphysical rainbows trying to prove that the soul is a simple substance and is therefore indestructible or that the idea of God presupposes His existence. A more notable negative contribution of greater value than many positive findings was the celebrated demonstration by Abel, the great Norwegian mathematician, that equations of the fifth and higher degrees cannot be solved by the ordinary processes in algebra.

In this volume I have not attempted to include all the criticism that has been directed against behaviorism, or to refute the system in its various particulars. So much of this has already been done that it seemed sufficient merely to refer to these

writings. The bibliography contains references to nearly all the articles and books that deal with special phases of behavioristic doctrine. To write a more or less exhaustive critique of behaviorism would require the publication of a voluminous work. It was rather my intention first to give a comprehensive survey of the whole behavioristic system, then to examine the validity of its basic principles, and finally to test its workability in practical life. My own position I have tried to make clear in the concluding part as well as in chapters VIII, XIII, and XIV.

If I had the disposition to revise this little work, I should have moderated its polemical tone which is apt to give a wrong impression. It is to be hoped that the writers whose views I have impugned, and most of whom I regard as very able persons, will understand that my quarrel is not with behaviorists but with behaviorism. As Béralde says in *Le Malade Imaginaire* "'Tis not the men he laughs at but the absurdity of their doctoring." The attempt to cure the patient by killing him is a time-honored experiment that seems destined to be resorted to as long as there is life and a minimum of mind.

A small portion of this book has already appeared in the form of articles in various periodicals. The chapter "Behavior and Intelligence" was published in the *Psychological Review* (1922). The appendix on the relation between intelligence and intellect

appeared in *The Journal of Philosophy* (1922), while most of the chapter entitled "Psychology in the Light of Medicine" was printed in *The Journal of Abnormal and Social Psychology* (1922). The chapter on Behaviorism in the Social Sciences was read as a paper before the American Psychological Association at the Princeton meeting in 1921.

I am greatly indebted to Dr. W. S. Taylor of the University of Wisconsin for his painstaking efforts in reading the proofs and calling my attention to certain slips. In this work he was assisted by Mr. J. C. Tjaden of the University of South Dakota. Mr. H. Helson of Harvard University has laid me under further obligation by the compilation of an index.

A. A. ROBACK.

Cambridge, June, 1922.

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THE ARGUMENT

What is Behaviorism?

The layman in psychology is not likely to be familiar with the term behaviorism. Though introduced into the English language some years ago and found in the recent editions of the best known unabridged dictionaries, the word does not suggest the significance with which it is fraught.

(In spite of the many psychologists who have adopted the general outlook of behaviorism in some phase or another and who maintain that there is no incompatibility between psychology and the new movement, a little reflection will show that the issue in the last analysis subsides into the question *whether there is room for the study of mind in the world of science.* Behaviorism, that is to say the genuine product, *reduces all psychology to a study of movements* of limb and muscle or gland, more particularly movements of the body as a whole. Since movements are physical and not mental, it follows that psychology is concerned with physical manifestations alone.

All mental phenomena in order to be adequately studied must according to a thoroughgoing behaviorism reduce to movement (behavior)? The mental, that state which you identify with yourself at any given moment of your waking life, is to be disregarded scientifically, with the result that psychology, instead of describing, classifying and explaining states of consciousness,

is transformed into an offshoot of a conglomeration in which physics, physiology and biology are mixed in unequal parts. ✓ This science taking the place of traditional psychology is calculated to state what bodily and organic movements will take place upon the slightest change in the environment of a person or other member of the animal kingdom.

The behaviorist emphasizes external observation at the expense of inner examination of one's states. His method is akin to that of the chemist or physiologist and his results are of a similar nature.

Behaviorism tends to change the complexion not only of psychology but of all the sciences and disciplines that make use of psychological concepts as well. The issue then between psychology and behaviorism is one of great practical importance, and the far-reaching consequences of a consistently behavioristic psychology can hardly be dwelt upon at too great length. ✓

Part I.

**HISTORICAL AND
EXPOSITORY.**

INTRODUCTION.

I. THE PARTING OF THE WAYS.

MODERNISM IN PSYCHOLOGY—TRANSITION FROM SOUL TO MIND—
SPREAD OF BEHAVIORISM—PROPAGANDA UNCHECKED.

Man's a strange animal, and makes strange use,
Of his own nature, and the various arts,
And likes particularly to produce
Some new experiment to show his parts;
This is the age of oddities let loose,
Where different talents find their different marts.

(Byron.)

Only two decades ago, the definition of psychology and the delimitation of its scope were a matter of general agreement. The soul had been relegated to the spheres of philosophy and theology, while no element had been introduced to take the place of the positive fact of consciousness. For a time it seemed as if consciousness, at least, would remain the indisputable domain of psychology, but the modernism of our age has apparently not spared its very creator—Mind—and, behold the spectacle of its being transformed into behavior for the benefit of our science and the edification of its radical votaries. If dadaïsm is the last word in art, if jazz is the omega in music, why may we not have a similar transvaluation in psychology?

Psychology has certainly been passing through a

crisis in its history these last ten years—a crisis which may well compare with its transition from the soul empyrean to its present level of consciousness. There is this difference, however, which should make us view its present status with greater confidence, that prior to assuming its present aspect it could not lay claim to any scientific pretensions, whereas the vast body of experimental literature of to-day has vindicated for it a respected place among the natural sciences. For this reason it need not be supposed that just as the “soul” definition gave way to the “consciousness” definition, so the latter will necessarily be superseded by the behavioristic view.

Introspectionists will have to admit that the behavioristic movement, though confined largely to this country alone, is a growing factor; and owing to various circumstances, it has been receiving notoriety or prominence in other than psychological circles. This is to some extent natural. In the first place, novelty has always been a human desideratum; and even scientists are human beings. Secondly, behaviorism had turned into a *psychologia militans* almost from its very inception, with the result that its propagandist tone has often been mistaken by laymen and workers in allied fields as the ring of conclusiveness and conviction. Thus we find sociologists, economists, social reformers and others just straining their energy to talk in behavioristic terms as if the phrase “motor response” or “reaction-patterns” were more significant or

more ultimate a reduction than terms bearing a reference to mental states and processes.

The well-deserved castigation administered by Titchener¹ to the champion behaviorist has unfortunately not left its lasting impress upon the mischief-maker, and what is worse, this act of justice has been rendered in private session, for although the periodical in which the review of Watson's programme was published is accessible to the psychological public, it happens to be, by virtue of its miscellaneous yet at the same time technical contents, a rather out of the way publication and one not duly taken note of.

Titchener's comments too were directed more against Watson's particular brand of behaviorism, and not so much against the movement in general which, it must be conceded, has been expanding since over considerable territory. The basic pre-suppositions of behaviorism, have, to my knowledge, not been scrutinized by its opponents in the province of psychology, though, in philosophical circles, questions regarding the existence of consciousness, its nature and relations have cropped up again and again only to be disposed of in a purely philosophical manner and diverted into the usual channels of idealism and realism (or materialism).

The controversy between behaviorism and introspectionism need not necessarily be encumbered by

¹ E. B. Titchener: 'On "Psychology as the Behaviorist Views It" ' *Proceed. Am. Philos. Society* 1914, LIII p. 1 ff.

such problems as the subject-object relation, and the like. The grievances that the seceding wing is airing against the older psychology are at least professedly shorn of philosophical considerations; and of course it is to be expected that the defence of introspectionism will be undertaken and carried out upon the same ground. In this little volume, it is my purpose to steer clear of epistemological as well as metaphysical speculation. ,

CHAPTER I.

THE ANTECEDENTS OF BEHAVIORISM.

COMTE AND COURNOT AS BEHAVIORISTS—HOBBS IS PRECURSOR—
BIOLOGISTS UNSYMPATHETIC TO PSYCHOLOGY—ANIMAL OBJECTIVISTS ANTI-PSYCHOLOGICAL—CONDITIONED REFLEX SCHOOL—
CATTELL AND DEWEY AS PRE-BEHAVIORISTS—JAMES' RADICAL EMPIRICISM GIVES IMPETUS TO MOVEMENT—RÔLE OF AMERICAN REALISTS (PERRY, WOODBRIDGE, BUSH, SANTAYANA)—INFLUENCE OF MOTOR THEORIES OF CONSCIOUSNESS—ORIGIN OF TERM *behavior*.

The growing interest in the new movement will probably be regarded by its adherents as well as by many outsiders as a sign in its favor. To be sure, a sign it is, but not an important one, not one that is indicative of its truth value. I have noticed too that elementary students are as a rule inclined to accept the definition that psychology is the science of behavior instead of the more widely accepted view. This circumstance, the cause of which is readily explainable, should neither tend to flatter behaviorism nor serve to discourage its opponents.

In his references to Watson's original outlines of behaviorism¹ as unhistorical, Titchener was concerned only to prove by means of quotations from Comte and Cournot, that the doctrine was neither

¹ J. B. Watson: 'Psychology as the Behaviorist Views It'. *Psychol. Rev.* 1913 vol. XX, p. 158. 'Image and Affection in Behavior'. *Journal of Philos. Psychol. & Scient. Methods* 1913, vol. X, p. 421.

entirely new nor epoch-making.² Watson's asseveration that "behaviorism is an American production" and that "the attempts of Titchener to tie it up with past 'revolts' in psychology . . . are based upon an insufficient knowledge of its tenets,"³ is devoid of the slightest foundation, for it is well-known upon what grounds Comte has eliminated psychology from his classification of the sciences. Indeed certain passages in Comte's writings are strikingly similar in tone and temper to the opening pages of Watson's *Behavior*. We can hardly find fault with one's memory for recognizing the following sentences wrongly as Watson's. "After 2000 years of psychological pursuit, no one proposition is established to the satisfaction of its followers. They are divided to this day into a multitude of schools, still at variance about the very elements of their doctrine. This introspection gives rise to almost as many theories as there are observers. We ask in vain for any one discovery, great or small, which had been made under this method".⁴

Behaviorism, I submit, is merely a philosophical attitude as applied to the subject-matter of psychology.⁵ This attitude will be recognized as that of

² E. B. Titchener: 'On "Psychology as the Behaviorist Views It"' *Proceed. etc.* pp. 4-5

³ J. B. Watson: *Psychology from the Standpoint of a Behaviorist*. Preface VII.

⁴ Aug. Comte: *Cours de Philosophie Positive*. (Fifth edition). p. 29. Titchener does not quote from the introductory chapter of the *Cours* which contains the most characteristic onslaught against psychology.

materialism; and everyone who has had leanings in that direction will be discovered to have entertained views in psychology akin to behaviorism. There are passages in Hobbes which may be pointed to as indicating his belief in the intimate connection between mind and motion; and the stress which he is known to have laid on the concept of motion would tend to reveal his behavioristic hankering, though it must necessarily have been submerged on account of the inadequate knowledge, at the time, of the psychoneural processes.⁵

It is not my object to undertake a rummaging expedition into the history of philosophy so as to discover a germ of behaviorism here and there. Only the setting of the radical faction in psychology is important for our purpose; and we shall see that a number of causes or factors have conspired to bring about the rebellion.

⁵ There are numerous passages which may be quoted to bring to the surface Hobbes' incipient behaviorism. "Sense, therefore, is some internal motion in the sentient, generated by some internal motion of the parts of the objects. . . ." (*The Philosophy of Hobbes, Woodbridge Collation p. 88.*) "For seeing in all sense of external things, there is mutual action and reaction, that is, two endeavors opposing one another. . . ." (*loc. cit.* p. 95). In a large measure Hobbes is more consistent and thoroughgoing than his intellectual heirs of the twentieth century; for the senses and imagination are treated by him under the head of physics (*Hobbes' Works, Molesworth edition vol. 1, Part IV*). "The motions of the Mind" (such as appetite, aversion, love, etc.) are taken up afterwards because "they have their causes in sense and imagination, which are the subject of *physical* contemplation." (*loc. cit.* vol. 1, Part 1, pp. 72-73).

In the first place, psychology has generally been viewed askance by physiologists and biologists ever since the science of consciousness was freed from its philosophical bondage and annexed to the natural sciences. It is human for scientists to wish that all science terminated with their particular field. Sociology and anthropology have provoked psychologists in a similar way.

A questionnaire which Yerkes had addressed to "twenty eminently able and successful American biologists", asking them to express themselves as to the status of psychology among the sciences, disclosed the fact that eight out of the nineteen who replied regarded psychology as a part of physiology. Only seven held that it was an independent science. The results of this inquiry led the investigator to the conclusion that "the majority of American biologists either consciously and avowedly, or without realization of the fact, lack that definite knowledge of psychology which alone could entitle them to an opinion concerning the nature of the subject or its right to existence".⁶ Precisely so; and the biologists have had no small share in the advance of behaviorism.

Behaviorism has further been promoted by the anti-psychological attitude of such men as v. Uexküll, Nuel, Beer, and Bethe who have combated all attempts to establish an animal psychology or, as

⁶ R. M. Yerkes: 'Psychology in its Relation to Biology' *Journal of Philos. Psychol. & Scient. Methods*. 1910 vol. VII, p. 116.

they called it, comparative psychology. The methods employed in animal psychology and its atmosphere are not, as a rule, suitable to the special needs of a human psychology much as their general problems may overlap.

A further impulse in that direction came from the physiological investigations of Pavlov and his pupils. It was not their particular point of view as regards psychology that lent the stimulus to behaviorism, but the methods of obtaining clean-cut results in the form of *conditioned reflexes*, which suggested that consciousness was not a necessary factor in the study of psychology. That these methods actually prove nothing of the kind may be easily inferred from Bechterew's labored attempts to bridge the gap between ordinary reflexes and higher mental processes such as volitional impulses which he denominates 'personal' reflexes.⁷

Symptoms of behaviorism are detectable in the writings of Cattell as early as 1904⁸; and more pronounced marks are to be found in some of Dewey's papers where for instance he lays it down that "the subject matter of all awareness is thing-related-to-organism—related as stimulus direct or indirect or as material of response, present or remote, ulterior or achieved", and where he insists that "relations of far and near, etc." are "differences made in what

⁷ W. von Bechterew: *Objektive Psychologie* p. 434 ff.

⁸ W. M. Cattell: 'Conceptions and Methods of Psychology' *Congress of Arts and Science*. Universal Exposition St. Louis 1904. vol. V pp. 597-598

things would have been without organic behavior—differences made not by 'consciousness' or 'mind', but by the organism as the active centre of a system of activities".⁹

On the philosophical side the impetus to behaviorism was given by James through his essay "Does Consciousness Exist?" It goes without saying that in spite of the declarations that "the stream of thinking is only a careless name for what, when scrutinized, reveals itself to consist chiefly of the stream of my breathing" together with certain "intracerebral adjustments", and furthermore "that entity (*sc.* consciousness) is fictitious"¹⁰—James cannot be construed as having renounced his whole system of psychology so carefully elaborated in his *Principles etc.* That James was possessed of a slight behavioristic tendency, as revealed by his original overstatement of the motor rôle in the emotional complex, may readily be granted; but after due allowance is made for his different approaches, we should take it that his affiliation with behaviorism bears only a tangential relation.

In line with James's criticism, realists like Woodbridge¹¹ and Bush,¹² in their development of a

⁹ John Dewey; 'Reality as Practical'. *Essays Philos. and Psychol. in Honor of William James* p. 65

¹⁰ W. James; *Journal of Philos. Psychol. & Sci. Methods* 1904 vol. 1 p. 491. Afterwards reprinted in *Essays in Radical Empiricism*.

¹¹ F. J. E. Woodbridge: 'The Problem of Consciousness' in *Studies in Philos. and Psychol. Garman Commemorative Volume* p. 137 ff.

¹² W. T. Bush: 'The Nature of Consciousness' *Jour. of Philos.*

relational view of consciousness, have further suggested the possibility of treating mind in terms of objects. "The whole conscious situation," says Woodbridge, "seems resolvable into things related somehow to one another," and the relation of meaning he further claims to be merely a "relation of things".

Contemporaneously with the radical sallies of James, Santayana subordinates the portion of psychology which he considers scientific to physiology. "It belongs to natural history and constitutes the biology of man" is his pronouncement on psychology. In another passage he declares the task of scientific psychology is to "develop physiology and anthropology until the mechanism of life becomes clear. . ." ¹³

With the incorporation of neo-realism as a philosophical school came the re-enforcement of the radical movement in psychology. Perry's article "Conceptions and Misconceptions of 'Consciousness'",¹⁴ though directed against the metaphysical coloring of the term consciousness and not against its use in psychology, where "it may be shown to mean something definite and important", served partly to bring into question the value of this concept altogether.

Psychol. & Sci. Methods 1905 vol. II, p. 119 ff. 'Consciousness, The Sense Organs and the Nervous System' *ibid.* 1909 vol. VI p. 449.

¹³ G. Santayana: *Reason in Science* p. 140. loc. cit. p. 158

¹⁴ R. B. Perry: *Psychol. Review* 1904 vol. XI p. 282

The impression that neo-realism and behaviorism are inseparable is altogether too prevalent partly because of Holt's conspicuous position in both these schools, and partly because neo-realism is looked upon as a mechanistic philosophy. That there is no necessary connection between realism and the muscle-gland aspect of psychology may be gleaned from the fact that neither Spaulding¹⁵ nor Montague¹⁶ is in sympathy with the latter while Bertrand Russell's attitude towards it appears to be more that of the amused critic who, with a smile on his lips, turns Watson's contentions inside out.¹⁷

More remote influences which prepared the soil for the behavioristic crop were the study of tropisms in lower organisms and the emphasis laid on motor theories of consciousness by such authorities as James, Münsterberg, Ribot and Dewey. As in the old fable of the Arab and the camel, the motor doctrine had only been allowed entrance but gradually became emboldened enough to evict the rightful owner from his domain.

In discussing the antecedents of behaviorism, I have confined myself to the movement which has developed in this country. The claim which Wat-

¹⁵ E. G. Spaulding: *The New Rationalism* p. 478

¹⁶ W. P. Montague: 'A Realistic Theory of Truth and Error' in *Neo-Realism* p. 270 ff.

¹⁷ B. Russell: 'How Propositions Mean'. *Problems of Science & Philosophy. Aristotelian Society Proceedings. Supplem.* vol. II. In his recently published volume *The Analysis of Mind* he assumes a more serious attitude towards behaviorism and seems even to lean towards it.

son sets forth in the preface to his *Psychology from the Standpoint of a Behaviorist* that the article "is purely an American production" does not seem to be well-founded in view of the fact that in 1905 McDougall had already defined psychology behavioristically in his *Introduction to Physiological Psychology*. It is true, however, that behaviorism as a thoroughgoing system did not take root either in the British Isles or on the continent.

Similarly Pillsbury's statement to the effect that Jennings was the originator of the term behavior, in its technical sense,¹⁸ is not quite accurate, and is apt to be somewhat misleading as regards the latter. In the first place the scientific use of the term is to be found as early as 1866 in one of the Duke of Argyll's works where in differentiating between law as an order of facts and law as a Force, he has occasion to remark "In chemistry the behavior of different substances towards each other in respect to combination and affinity, is reduced to system under laws of this kind, and of this kind only" (order of facts).¹⁹

Huxley has also employed the same word in connection with water.²⁰ Jennings may have been

¹⁸ W. B. Pillsbury: 'The New Developments in Psychology in the Past Quarter Century'. *Philosophical Review* 1917, vol. XXVI p. 65

¹⁹ Duke of Argyll: *Reign of Law* p. 67 (5th ed.).

²⁰ T. H. Huxley: *Physiography*. P. 135. "It is instructive to watch the behavior of water" etc. The lectures which make up this volume were delivered in 1869, though the book was published in 1877.

the first to talk of behavior with reference to an organism,²¹ but surely that was no new application, much less an innovation. Secondly, the linking of Jennings' name with the inauguration of the movement must surely create the impression that he too belongs to the psychological protestants or at least is in sympathy with them, which would be a misrepresentation, for Jennings has been one of the few eminent American biologists to proclaim the inadequacy and futility of a purely mechanistic view of animal behavior.²²

²¹ H. S. Jennings: *The Behavior of Unicellular Organisms* (1899).

²² H. S. Jennings: *Behavior of the Lower Organisms* pp. 328-337

CHAPTER II.

VARIETIES OF BEHAVIORISM.

ABSENCE OF DEFINITE STANDPOINT AMONG BEHAVIORISTS—NOT BEHAVIORISM BUT BEHAVIORISMS—YERKES' METHODOLOGICAL BEHAVIORISM—HURSTIC BEHAVIORISM OF McDUGALL—SINGER AS WATSON'S FORERUNNER—IDENTIFIES MOTION OF ATOMS WITH THOUGHT—HOLT'S EMPHASIS ON OBJECTIVE ENVIRONMENT—BIO-SOCIOLOGICAL BEHAVIORISM OF PARMELEE AND PATON—MAX MEYER'S NEUROLOGICAL PHASE—BODE'S APPROACH FROM THE PRAGMATIST CAMP—KIRKPATRICK'S GENETIC BEHAVIORISM ("ORGANOSIS")—BAWDEN'S BRAND NOT MECHANISTIC—TAWNEY'S "*aesimation*" VIEW—WARRFN BEHAVIORISTICALLY INCLINED BUT NOT STRICT BEHAVIORIST—WEISS ABOUT HALF WAY BETWEEN WATSON AND MEYER—OTHER BEHAVIORISTS (K GORDON, S. BENT RUSSELL, FROST, G DE LAGUNA,)—ANGELL SYMPATHETIC TOWARDS NEW MOVEMENT—PILLSBURY'S COMPROMISE POSITION—OTHER PSYCHO-BEHAVIORISTS (COLVIN, BAGLEY, HOLLINGWORTH, POFFENBERGER, SMITH, GUTHRIE)—MOTO-MENTALISM (THE CLARK SCHOOL)—OBJECTIONS TO APPLYING TERM BEHAVIOR TO MENTAL PROCESSES—SELF-BEHAVIORISM (CALKINS)—FORMAL BEHAVIORISM—"ORGANISMIC" BEHAVIORISM—KEMPFF'S AFFECTIVISTIC BEHAVIORISM—BEHAVIORISM, A GAMUT OF MANY COLORS

One great disadvantage that psychologists of the older school experience in their endeavor to meet the arguments of behaviorism is the absence of a definitive standpoint to which all its votaries may be referred. There are a number of professed behaviorists I have come across who do not deny that consciousness plays an important part in the observation of our experiences, but who, neverthe-

less, stress the study of behavior to an equal or greater extent. Of course there is the presumption on their part that the "mind" psychologist fails to take account of the organic concomitants of mental states. I have yet to find an introspective psychologist who is so restricted in his outlook as to exclude from his field the investigation of bodily happenings insofar as they are likely to throw any light on the processes of consciousness. How often do we engage an avowed behaviorist in a discussion which winds up with the statement "Oh, of course I don't go that far in my behaviorism; consciousness is naturally an essential item." In other words, he has no quarrel with psychology as commonly accepted save for the name.

There are behaviorists and behaviorists, running all the way from those who consider consciousness not only a myth but a profanity down to the mitigated form such as Yerkes seemingly represents when in opposing the Watsonian brand he declares "Nevertheless I must insist that I am still a behaviorist, for I believe in the importance of the scientific study of behavior and am more deeply interested in it than in any other scientific activity. Is it not true that, as in the case of our philosophies, there are behaviorisms and behaviorists?"¹

What Yerkes probably means is that as a worker

¹ R. M. Yerkes: 'Behaviorism & Genetic Psychology': *Journal of Philos. Psychol. & Scient. Methods*. 1917 vol. XIV, p. 155

with infra-human organisms, he is primarily interested in the study of behavior for methodological reasons, but unless he is willing to transact all psychological business in terms of motor response and to let the matter rest there, in other words to regard the data of behavior as the ultimate goal of psychological analysis, his claim must be disregarded on general grounds. If one could at the same time both carry the behavioristic banner and hold on to the pillar of introspectionism, then indeed *cadit quaestio*, and if behaviorism is not to be mutually incompatible with the orthodox view of psychology, it must be taken in the sense of a practical rough approach to phenomena without reference to their further analysis.

Since no classification of behaviorists has ever been attempted on a large scale, it may not be amiss to consider at some length the main varieties of the movement. The intermediate types are of course not always easily discriminable, one phase shading almost imperceptibly into another, but it will be seen from our examination that we must deal not merely with behaviorists pure and simple but with *nominal* and *disguised* behaviorists as well.

We need only refer to McDougall who aside from being the originator of the view has done nothing to advance it, but has given us instead a well-knit and systematic account of the components of consciousness, though he may not consider them as

such, and has thus in reality unwittingly perhaps reënforced introspective psychology.²

One of the earliest *explicit* behavioristic credos comes from the pen of E. A. Singer whose general philosophical position seems to be midway between neo-realism and pragmatism. In a paper of considerable literary merit he challenges the ordinary view of mind. To him mind is a trait of behavior, a trait to be recognized through external characteristics, so that it is possible to tell another man's feelings better than the feeler himself can know them.³ Singer for whom paradox holds no terrors goes even farther and states "It is quite as likely that under certain conditions I do not know what red is."

Of little consequence to him is Miller's exposé of the fallacies contained in his statements, viz., (1) confusing the direction and likely development of a feeling (like love), as interpreted by outside observers, with the feeling itself as experienced by the subject or patient who may not be sure that the feeling is love, (2) confusing the conventionalized name, say red, with the sense-experience it stands for,⁴ since in his reply he gracefully accepts the

² In his 'Prolegomena to Psychology' (*Psychol. Rev.* 1922 vol. XXIX pp. 38-39) McDougall has at last become at one with himself and has re-defined psychology in mentalistic terms.

³ E. A. Singer: 'Mind as an Observable Object'. *J. Phil. Psychol. & Sci. Methods* 1911, vol. VIII p. 180

⁴ D. S. Miller: 'Is Consciousness a "Type of Behavior?"' *loc. cit.* p. 325

imputation and even pleads guilty to identifying the question, "*What does consciousness mean?*" with the question, "*What leads me to call a man conscious?*"

It is quite easy to see that Singer and Miller differ in fundamentals, a circumstance which renders all argumentation futile, since every step forward discloses a widening of the breach, and the controversy at bottom belongs to the domain of logic rather than to psychology.

In another discussion, Singer reveals a more decided radicalism. It is true he does not give up his delightful rambling and charming irrelevancies, but amidst this pastime, he pauses to complain of Washburn's unreasonableness in posing the question, "What is to be done with the thinker who exhibits no behavior, for the reason that he is thinking?" especially as "Miss Washburn refuses to identify any sort of a motion of atoms with a thought, and"—grieves Singer—"this makes the whole situation trying".⁵

We must remember that Singer claimed in other articles to learn the meaning of consciousness through observation of others. Washburn's question then is quite in place, and how does Singer acquit himself of his task? After alluringly dodging the issue by appealing to all the devices of rhetoric that he is master of, he was forced to a position which anticipated Watson's celebrated laryngeal substitu-

⁵ E. A. Singer: 'On Mind as an Observable Object' *loc. cit.* 1912 IX p. 208

tion for thought—if it has not actually suggested it. “This is the behavior of the passive thinker that I mean by his thought” reads Singer’s solution. “I should begin by looking for such movements of atoms as actually moved too slightly for us to notice it [?]-the organs of expression, the tongue principally, and the eyes. Or perhaps I should find part of the movements to be of this nature, part of them such as strained the muscles that inhibited such expression”. If this does not sound encouraging enough, the writer continues to say, “But of these details I am not sure. To find just what that behavior is which others call the criterion of mind and which I call mind is a problem of long and careful analysis. For this analysis we must turn to the psychologist and above all, I have recently come to hope, to the comparative psychologist”. I hope that the psychologist who is assigned this neat job of showing just what that behavior is which Singer calls mind will at least be repaid in advance by the humor the task suggests. This moderate demand of Singer’s throws a good deal of light on behavioristic logical procedure.

Holt, on the negative side an extremist approaching the thoroughgoingness of Watson, manifests a good deal more critical insight on the positive side both in his definition of behavior and in the search for a solution to the perplexing problem which affection offers the behaviorist. The dominant feature of Holt’s behaviorism is the thesis that the

organism does not as a rule respond to the immediate stimulus but rather to the objective environment.

Parmelee, for whom the science of behavior "includes a small part of biology but most if not all of psychology and sociology; for most, if not all of mental and social phenomena can be reduced to terms of behavior",⁶ represents, as will be seen, a sort of conglomerate behaviorism which is supposed to be more inclusive than psychology. Parmelee, however, does not go the length of Watson or Holt. Not only does he devote a goodly portion of his book to the discussion of consciousness, personality and intelligence, but expressly states mind to be "a stage in the determination of certain kinds of behavior." Parmelee and Holt both seem to regard behavior as a process of release, but while the latter thinks it wholly dependent on factors external to the mechanism released (except apparently in the case of affection which seems to offer him a good deal of trouble), the *mind* according to the former is analogous to "the trigger of a gun or a button which releases an electric current which explodes a mass of nitroglycerin."⁷

Paton's position is much like Parmelee's, and though he is at no pains to define the term behavior, he employs it to cover phenomena in the biological as well as the psychological and social spheres. Yet

⁶ M. Parmelee, *The Science of Human Behavior* p. 2

⁷ *loc. cit.* p. 324

I should hesitate to call him a behaviorist in view of his unwillingness "to discard the word consciousness from our psychological vocabulary and to substitute 'behavior' or 'adjustment at higher levels'".⁸

Max Meyer's behaviorism resolves itself into a solid attempt to discover the neural correlates of the elements of consciousness and to exploit them in the place of such states as sensation, affection, attention etc. Strictly speaking Meyer is not a behaviorist in the sense the word is understood to-day. He is a physiological psychologist pure and simple; and his position may be summed up in the following two extracts which prove that he is not altogether estranged from subjective psychology. "The scientific value of introspective psychology consists merely in the fact that it aids us in discovering the laws of nervous function."⁹ "It is too early then to renounce under any and all conditions all subjective terms in psychology. We cannot put them out of the world by putting, like the proverbial ostrich, our heads in the sand so that we do not see them."¹⁰

⁸ S. S. Paton *Human Behavior* p. 50

⁹ Max Meyer *Fundamental Laws of Human Behavior* p. 239

¹⁰ Max Meyer 'The Present Status of the Problem of the Relation between Mind & Body' *Journal of Philos Psych and Sci Methods* 1912 vol IX, p. 371. By the manner in which Meyer has treated the subject in his recent volume *Psychology of the Other One* (p. 407), it is apparent that it has taken the author ten years to attain the wisdom of the proverbial ostrich. His confusion of consciousness and soul and consequent battling against a ghost in the belief that what satire he uses against the ancient concept may be applied with equal poignancy to the most certain fact of our existence—is to me

Another thread to the skein of behaviorism is added by Bode whose particular philosophical bias led him to throw his lot in with the critics of subjective psychology. After dilating on the limitations of introspection as a method,¹¹ he proceeds in subsequent papers to map out his specific brand of behaviorism which appears to differ from that of Watson in its emphasis on *conscious acts* as stepping stones for further readjustments of the organism. "From this standpoint the characteristic trait of conscious behavior lies in the fact that stimulus and response develop concomitantly."¹² The institution of a line of cleavage between purely automatic behavior and conscious behavior is an encouraging revelation of the exponent's reluctance to part with the concept of consciousness. The further elaboration of Bode's view in *Creative Intelligence* of which he was a collaborator, discloses a more marked division between mechanical and intelligent behavior. What constitutes consciousness is "the control by a future that is made present"; *e.g.*,

nothing short of an enigma. Furthermore his definition of psychology as "that in which psychologists are interested as men of science" is just as apt as defining endocrinology by saying that it is the science in which endocrinologists are interested.

¹¹ B. H. Bode: 'The Method of Introspection'. *J. of Philos. Psychol. & Sci. Methods* 1913, vol. X p. 90. "The endeavor to read back the results of analysis not only explains our experiences in terms of fictitious entities, but it makes the whole process of explanation unintelligible."

¹² B. H. Bode: 'Psychology & Behavior' *Psychol. Review* 1914, XXI p. 59

when somebody responds to a cut by anticipating it and accordingly avoiding it.¹³ And by applying various logical and verbal devices to his illustrations, he strains the conclusion on the next page that "consciousness is a name for a certain change that takes place in the stimulus, or more specifically, it is a name for the control of conduct by future results or consequences." Small wonder that Marshall¹⁴ is puzzled by Bode's statements and calls for more light on the assertion that "Consciousness . . . is just a future adaptation that has been set to work so as to bring about its own self-realization." To me it suggests the story of little Willie who swore that he was delayed because he was stuck in quicksands and had to go to a neighboring house for a shovel with which to dig himself out. Bode's rejoinder¹⁵ to Marshall¹⁶ does not clarify matters, but serves rather to accentuate the gap between ordinary psychology and behaviorism. Bode's general view, if I understand it at all, is, when freed from its pragmatic moorings, akin to that of Parmelee.

In Kirkpatrick we have a tentative behaviorist. Writing in 1907 when functionalism was in its hey-

¹³ B. H. Bode: *Creative Intelligence* p. 242

¹⁴ H. R. Marshall: 'Behavior' *J. of Philos. Psychol. & Sci. Methods* 1918 XV, p. 261

¹⁵ B. H. Bode: 'Consciousness as Behavior' *J. of Philos. Psychol. & Sci. Methods* 1918 XV, p. 449

¹⁶ H. R. Marshall: Letter to Editors *J. of Philos. Psychol. and Sci. Methods*. 1918 vol. XV pp. 559-60

day, he suggested the term *organosis* to signify "the adaptive functioning of any organism or organ without reference to whether the organ is nervous or non-nervous or the organism vegetable or animal."¹⁷

Much after the fashion of Aristotle whom he does not mention in his brief paper he proposes four levels of intelligence or organosis, starting with the purely vegetative function and ending with that of abstract reasoning. Kirkpatrick, however, unlike the radicals of to-day, recognizes fully the influence of consciousness in behavior.

I must confess that the views and terminology of the philosophical behaviorist, more particularly of the pragmatist camp, are beyond my comprehension; and those of my colleagues whom I have asked to explain the meaning of the subjoined passage from Bawden's historical article seemed to be equally mystified. It would be futile therefore for me to attempt an exposition of Bawden's specific type of behaviorism but from the quotations given, the reader will note the kinship with Bode's species. In the language of Bawden, mind is "behavior in which certain objects which serve as excitants are undergoing experimental reconstruction into stimuli adequate to the incipient response". Supposedly by way of elucidation the writer tells us further that "It is behavior in which certain attitudes are under-

¹⁷ E. A. Kirkpatrick: 'A Broader Basis for Psychology Necessary' *J. Philos. Psychol. & Sci. Methods* 1907 vol. IV p. 542. An expansion of this genetic account appears in Kirkpatrick's *Genetic Psychology*.

going reorganization into adequate attentional discrimination of the response. What in psychology has been known as sensations and ideas are but the sharpening of the stimulus and response in terms of the incipient reorganization of behavior set up within the total circuit by some shock of relative disadaptation".¹⁸ It is a pity the students who used to gasp at their assignments in Fichte and Hegel could not have been given as a propaedeutic some of our relationists' writings to serve as a mental maze, though I am not sure whether the outlet is discoverable.

In spite of Bawden's antics with the terms *mind* and *mental*, he seems to take a broader view than do the mechanistic behaviorists, for he defines psychology "as the science of the behavior of organisms in so far as they exhibit mentality".

Tawney's aloofness from the mechanistic platform is another indication that the mere label of behaviorism does not represent any clear-cut or specific point of view.

It is not easy to become oriented in Tawney's presentation. Apparently he favors the term behavior in his system, yet in introducing such phrases as "the fact of value" which to him is "the fundamental fact of mental life" and "psychic organisms," he bids fair to outstrip the mentalist in his anti-mechanism. The article is replete with references to consciousness, value, meaning and per-

¹⁸ H. Heath Bawden: 'Presuppositions of a Behaviorist Psychology' *Psychological Review* 1918 vol. XXV p. 189

sonality as ultimates. Still the writer presumably believes himself to be a behaviorist holding that "psychology is not primarily concerned with self or character or intelligence: the science is primarily concerned with the type of behavior which we have here called aesimation",¹⁹ i.e. as Tawney had already described, "the tendency of psychic organisms first to select and then keep within their control whatever is necessary to their life."

Among the mild behaviorists may be reckoned Warren, who is loath to give up the heritage of classic psychology, and yet at the same time feels that "our science has been too much dominated by introspective analysis"²⁰ But it is quite evident both from the general tenor of his article out of which the quotation has been taken and his text book²¹ that psychology cannot in his view be limited to the study of behavior alone. And what introspective psychologist would be so obdurate as not to concede that the exclusive appeal to introspection is not so safe a method as the combined use of introspection and objective observation, whenever such external observation is possible?

Weiss, on the other hand, is uncompromising in his attitude. Attacking both structural²² and

¹⁹ G A Tawney 'What is Behavior?' *Journal of Philos Psychol & Sci Methods* 1905 XII p 31

²⁰ H C Warren 'The Mental and the Physical' *Psychol Rev* 1914, vol XXI, p 95

²¹ H C Warren *Human Psychology* p 9

²² A P Weiss: 'Relation between Structural and Behavior Psychology' *Psychol. Rev* 1917 XXIV p. 301

functional²³ psychology as beclouding the matter under investigation, he strikes a note in which there are to be found elements both of the neural system propounded by Max Meyer and the programme of bodily adjustments as set forth by Watson. Unlike the former, however, Weiss wishes to do away with consciousness altogether.

It would be a tedious process, and one of little service to psychology as a whole, to examine all the different tints and shades of behaviorism that we meet with in the periodicals. Sometimes one is tempted to divide behaviorists into controversial and matter of fact writers. Bawden,²⁴ for instance, belongs to the latter. This is true of S. B. Russell whose cavils against "subjective psychology" are restricted to a few lines,²⁵ and Kate Gordon who in her text book²⁶ simply takes it for granted that behavior is all we are concerned with in psychology.

The controversialists number, besides Watson, Weiss,²⁷ Frost,²⁸ G. A. De Laguna,²⁹ possibly Dun-

²³ A. P. Weiss 'Relation between Functional & Behavior Psychology' *Psychol Rev* 1917 XXIV p 353

²⁴ Heath Bawden 'The Evolution of Behavior' *Psychol Rev* 1919 XXVI, p 269-275, especially

²⁵ S. B. Russell 'Function of Incipient Motor Processes, *Psychol Rev* 1915 XXII p 163 'Effect of High Resistance in Common Nerve Paths,' *Psychol Rev* 1916 XXIII p. 231 'Compound Substitution in Behavior' 1917 XXIV p 62 'Advance Adaptation in Behavior' *loc cit* 1917 XXIV p 413 'Communication, Correspondence, and Consciousness' *loc cit* 1918 XXV p 341

²⁶ K. Gordon *Educational Psychology Passim*

²⁷ A. P. Weiss 'The Mind and the Man-within' *Psychol Rev.* 1919, XXVI p 327 and other articles referred to already.

lap³⁰ and a score or more of others whose names have already been mentioned or else will appear in the course of this critique.

In addition, there is the paternally indulgent attitude towards behaviorism as manifested by Angell³¹; and finally reference may be made to Pillsbury's compromise position which consists in defining psychology as the science of behavior and yet treating it in all other respects for the most part introspectively. Pillsbury is not disposed to banish consciousness from our domain "because consciousness is at once an important means of understanding behavior and an interesting object of investigation for itself. . . ." In fact consciousness is set on an equal footing with behavior. "If one is made the end, the other must be made the means: if either is understood in its completeness, the other will also be known."³²

In this ambidextrous policy, Pillsbury is not

²⁸ E. P. Frost: 'Can Biology and Physiology Dispense with Consciousness?' *Psychol. Rev.* 1912 XIX p. 246 and 'Cannot Psychology Dispense with Consciousness?' *Psychol. Rev.* 1914 XXI p. 204

²⁹ G. A. De Laguna: 'Dualism in Animal Psychology' *Journal of Philos. Psychol. & Sci. Methods* 1918, XV p. 618 and her rejoinder to Washburn's reply in the same Journal 1919, XVI, p. 296 ff.

³⁰ K. Dunlap: 'The Case Against Introspection', *Psychol. Rev.* 1912, XIX, p. 404. Although more recently Dunlap has been sallying forth against behaviorism and would naturally repudiate any connection with that doctrine I cannot help making him out to be a behaviorist in disguise.

³¹ J. R. Angell: 'Behavior as a Category of Psychology' *Psychol. Rev.* 1913 XX p. 255.

³² W. B. Pillsbury: *Essentials of Psychology* p. 5.

alone. Colvin and Bagley label their book *Human Behavior* and yet define psychology in terms of consciousness or mind. Apparently they are not subsuming consciousness under behavior, for they often refer to the relation between the two by way of contradistinction.

Hollingsworth and Poffenberger are a bit more radical than Pillsbury in assigning a secondary rôle to consciousness which they regard as an aid to the understanding of behavior.³³ Smith and Guthrie have gone even farther in devising the convenient scheme of finishing up their behavioristic primer³⁴ with a psychological supplement.

Perhaps it is such a view as Pillsbury's that is responsible for the questionable phrase "behavior of consciousness" and the curious division of behavior into "mental" and "motor" phases.³⁵ Underlying this usage there is undoubtedly the unwillingness to renounce the method of introspection which, despite its belittlement, has been so useful in many investigations.

Watson's protest against the amphibian use of the term *behavior*, voiced in his review of Richardson's monograph is perfectly justified; and he ap-

³³ H I Hollingsworth & A T Poffenberger *Applied Psychology*

³⁴ S Smith and E Guthrie *General Psychology in Terms of Behavior*

³⁵ R F Richardson *The Psychology and Pedagogy of Anger* pp 31, 32, 53 cf also S C Fisher's 'The Process of Generalizing Abstraction' *Psychol Rev Monographs* 1916, vol XXI pp 92,

positely remarks in this connection that "apparently some of the introspectionists feel that when they have used the term 'behavior' of consciousness, they have yielded all that they need to yield to the behavior movement." ⁸⁶

My own objection to the coupling of the word behavior with the word consciousness or terms that denote components of consciousness such as perception, image and the like would rest on the following argument: Only that can behave which is relatively permanent. Now since every moment of consciousness is different from both the preceding and the succeeding moments, we have nothing but a series of changes, processes or states, each superseding the other. On the assumption of an enduring self or active principle, the term *behavior* may be introduced in the mental sphere, but to what purpose? If we say the organism "behaves", we mean by this word a definite function distinct from others such as growth, decay etc., but since the self, soul or any other non-material agent can do nothing else but *behave*, there is no sense in employing this word or any of its derivatives to designate an act or process or reaction. Again to speak of the behavior of

193 for phrases like "*behavior of color in consciousness*" and her Study *An Analysis of a Phase of the Process of Classifying* (*Am. Journ. of Psychol.* 1917 vol. XXVIII pp. 89, 94) for similar language. The term "mental behavior" may be found too in Hollingworth & Poffenberger's *Applied Psychology* cf. p. 295 for instance.

⁸⁶ J. B. Watson: *Mental Hygiene* 1920 vol. IV p. 245.

a perception or an image is to imply that our percept or image is the same while it is "behaving" (i.e.—really giving place to another percept or image)—something contradictory in itself.

Besides, the term "*behavior*" has been taken to connote not a single change or process or a continuous series of acts, but a *group of acts with a unitary character*, whether they are performed simultaneously or successively. Objectivity, i.e. the possibility of being observed by others, may be claimed as another condition of behavior, but this property need not be insisted on.

The recent declaration of Calkins for behaviorism is not without a tinge of irony and confirms the adage which says that extremes meet. Endorsing the behaviorist's emphasis on environment, she believes that her self-psychology is the only true behaviorism which psychology can countenance; for all the marks of behavior observable in the organism are exhibited by the self. The self is an integrated or coördinated whole, an enduring something with a distinct individuality capable of growth.¹⁷ We are not concerned here with the validity of the statements about the self, but rather with the fact that behaviorism is becoming more and more an elastic cover assembling under its protection and shelter the most incongruous species

¹⁷ M. W. Calkins: 'The Truly Psychological Behaviorism' *Psychol. Rev.* 1921 vol. XXVIII p. 14 ff.

of doctrine, even such a *potpourri* of psychoanalysis, mysticism and sociology as Elizabeth Severn has concocted.³⁸

The formal behaviorism of Tolman³⁹ and the stratified behaviorism of Kantor⁴⁰ are also developments in a direction not originally intended by the protagonists of the movement. Both writers, however, are deeply concerned with the pet stimulus-response relation, and are anxious to develop a non-physiological behavioristic structure.

Kempf's behaviorism consists in an ingenious attempt to link up the main principles of psychoanalysis with the activities of the autonomic nervous system which is supposed to be the *fons et origo* of our affective life. Consciousness he defines as the reaction of the body as a whole to the special or sensational activity of any one or several of its parts.⁴¹ Behavior consists of affective craving X environmental resistance, so that once we know any two terms of the equation, the third is easily deducible.

We need not take the time now to analyze

³⁸ E. Severn: *The Psychology of Behavior*.

³⁹ E. C. Tolman: 'A New Formula for Behaviorism.' *Psychol. Rev.* 1922 vol. XXIX p. 44 ff.

⁴⁰ J. R. Kantor: 'Psychology as a Science of Critical Evaluation' *loc. cit.* 1920 vol. XXVII. In his subsequent articles (See Bibliography) Kantor assumes more and more the color of a behaviorist though he keeps on changing the shade.

⁴¹ E. J. Kempf: *The Autonomic Functions and the Personality*, pp. 132, 141. The implication is that we think with our muscles *loc. cit.* p. 23.

Kempf's definition of consciousness which finds an analogue in the view of Abbot, a fellow psychiatrist, discussed in Chapter VI. Suffice it here to say that Kempf's definition is not nearly so plausible as his highly suggestive and intensely interesting observations in which his monograph abounds. A grain of logical analysis injected into the sparkling waters of psychoanalysis would probably disclose the flaw in the definition.

Without attempting to be exhaustive in the enumeration of the many varieties of behaviorism, I have presumably succeeded in showing that the term "behavior" is fraught with as much ambiguity, vagueness and haziness as can be imputed to the concept of consciousness. One might have thought that behaviorists agreed amongst themselves as to what constituted the fundamental notion of their science. Instead, we find that the disparagement of consciousness and the introspective method mark the bounds of their concurrence. On the positive side they remind us of King Petaud's court all differing amongst themselves in the very essentials of their substitute for traditional psychology. And the worst part of it is that they are so anxious to remove the mote from the other man's eye that they are not aware of their own beam. Thus when Weiss points out that "critics of behaviorism do not recognize clearly enough that the term consciousness varies in its meaning with almost every

person who uses it",⁴² he does not seem to realize that the charge may be directed, *mutatis mutandis*, with equal force against the critics of classic psychology. A behaviorism which clings to such adjuncts as "conscious" and "mental," or which permits the use of even sensations really gives evidence of its own footlessness; while, on the other hand, the admission of such facts as imagination, perception or feeling, *eo ipso* goes a long way toward the refutation of a thoroughgoing behaviorism such as Watson claims to represent. With anti-introspectionism a miss is as good or as bad as a mile. If consciousness must be resorted to only once in a lifetime, then it is a factor to be reckoned with. Even if it should only be regarded as a tool or a medium, it calls for an explanation as such, that is to say, by virtue of its figuring in life. But it is becoming more and more obvious that behaviorists have not taken the trouble to examine the foundations of their own doctrine, and it would perhaps not be out of place, therefore, to throw the searchlight on the underlying concepts and principles of behaviorism.

⁴² A. P. Weiss: 'Conscious Behavior' *Journal of Philos. Psychol. & Sci. Methods* 1918 XV p. 631.

Part II.

**CRITICAL: PRINCIPLES
OF BEHAVIORISM.**

CHAPTER III.

THE CASE AGAINST BEHAVIORISM.

THEORIES PRODUCED IN PLACE OF FACTS—THEORIES UNSUBSTANTIATED—"BEHAVIORIZATION" OF MENTAL PHENOMENA AND ITS FAILURE—CAN MEMORY BE DEFINED OBJECTIVELY?—"FREQUENCY AND RECENCY AS SOLE FACTORS OF LEARNING"—VALUE OF EXPERIMENTAL INVESTIGATIONS WITHOUT INTROSPECTION—INTERPRETATION NECESSARY FOR EVALUATION OF DATA

In the first place let us be reminded of the circumstance that behaviorism is posing as a scientific psychology rising against the inroads of speculation and theory. Presumably then behaviorists would be busying themselves with the facts definitely known. A close examination, however, of their writings discloses the nebulousness of their theories. Witness, for instance, the manner in which Watson explains away the image,¹ accounts for affection² and disposes of meaning;³ or the easy-going fashion

¹ J B Watson *Behavior* p 16 ff

² J B Watson *loc cit* p 21 ff

³ J B Watson 'Is Thinking merely the Action of Language Mechanisms?' Symposium by F C Bartlett and E M Smith, G. H Thomson, T H Pear, A Robinson and J B. Watson *British Journal of Psychol* 1920 vol XI p 103 "The question of meaning" reads the pronouncement of the arch behaviorist "is an abstraction, a rationalization and a speculation serving no useful purpose . . . From the bystander's or behaviorist's point of view the problem never arises. We watch what the animal or human

in which Holt "*behaviorizes*" even hallucinations.⁴ Nor are the physiological hypotheses of Max Meyer, Frost, Bent Russell, Weiss and others more reliable than the observations of introspective psychology. We are not here taking exception to the attempts made to discover the neural correlates of the chief mental functions, but we certainly have a right to decry the unfairness shown with respect to two different sets of findings. Behaviorism is allowed to theorize *ad libitum* at the risk of doing violence to the facts of common experience, while mentalism is ruled out on the ground that its testimony is not amenable to proof.

What, we may ask, have the behaviorists accomplished to substantiate their categorical statements, their promises and assurances, their hopes and credos? In a well-known passage, Watson has set forth the thesis that the underlying behavioristic basis of affection is to be sought in the tumescence and shrinkage of the reproductive organs in conjunction with changes in the quantity of secretion. On the strength of this view he suggested that the apparatus usually employed in working along the lines of the expressive methods of affection be applied to the sex organs. Then shall we see. Now

being is doing. He means what he does. . . . His action *is* the meaning. Hence exhaust the concept of action and we have exhausted the concept of meaning. It is a waste of effort to raise a problem meaning apart from actions which can actually be observed."

B. Holt: *The Freudian Wish*, p. 172 ff.

Watson has surely had sufficient time to devise a technique for the carrying out of such experiments to a successful issue, but so far as I am aware, there have been no startling results brought forth in consequence of the proposed measure.

It is likewise with all of the other enthusiastic dreams of the Utopians in psychology. The problems in human behavior were to be solved on the model of the investigations carried on in the *vivarium*, and even the higher processes were to be approached from an objective angle. This form of bravado not only succeeded in holding out unrealizable hopes to the romantic youth in the ranks of psychology, but actually inveigled some of the more prominent representatives of the science.

It is not my purpose here to offer objections to these various "behaviorizations". The falsity of the premises upon which some of these mental states are explained away is too palpable to render any such debating necessary. When a modern Gorgias insists there is no such thing as imagery, arguments may just as well be thrown to the winds. Much that is damaging to the behaviorist position will be found in papers by Bertrand Russell,⁵ and nearly all the participants in two British symposia,⁶

⁵ Bertrand Russell: 'How Propositions Mean.' Problems of Science and Philosophy. *Proceedings Aristot. Society* Supplement. vol. II.

'Is Thinking merely the Action of Language Mechanisms?' *British Journal of Psychology*, 1920, vol. XI. and 'The Concept of Behavior', *University of Durham Philos. Society* 1920-21 vol. VI.

Warren,⁷ Calkins,⁸ Marshall,⁹ Lovejoy,¹⁰ Weber,¹¹ Crosland¹² and Otis,¹³ and if some of the criticisms offered by these writers seem obvious, it is not due to their lack of acumen, but rather to the fact that the behaviorists have been making themselves an easy prey. The least vulnerable topic of psychology from the behaviorist point of view should have been memory. In fact it has frequently been remarked, not without a tinge of triumph, that Ebbinghaus's classical experiments were free from all introspective entanglements. Such a circumstance would tend to favor Watson's general doctrine especially as even the text books seemed to give more objective treatment to memory than to any other department in psychology. Watson accordingly could afford to approach the subject boldly and define memory as "a general term to express the fact that after a period of no practice in certain habits . . . the function is not lost but

⁷ H. C. Warren: 'Psychology and the Central Nervous System' *Psychol. Rev.* 1921 vol. XXVIII.

⁸ M. W. Calkins: 'The Truly Psychological Behaviorism' *Psychol. Rev.* 1921 vol. XXVIII.

⁹ H. R. Marshall: reference to articles in chapter II & Bibliography.

¹⁰ A. O. Lovejoy: 'The Paradox of the Thinking Behaviorist', *Philos. Rev.* 1922 vol. XXXI.

¹¹ P. H. Weber: 'Behaviorism and Indirect Responses', *Journal of Philos., Psychol. & Sci. Methods* 1920 vol. XVII.

¹² H. R. Crosland: 'Conscious Analysis in Learning' *Psychol. Rev.* 1922 vol. XXIX.

¹³ A. S. Otis: 'Do We Think in Words?' *Psychol. Rev.* 1920 vol. XXVII.

is retained as part of the individual organization, although it may through disuse have suffered greater or less impairment".¹⁴ This definition would do credit to the objectivist conception were it not for a *begging of the question* by which memory in the mentalist's sense is implicitly understood to connect the present with the past. As Edgell asks: "For whom is this a fact? Only for someone who can bring past and present together by memory and compare them."¹⁵ The clearest statement in which this fallacy is brought to light has been made by Sheldon who writes: "Now there can be nothing in the nature of present behavior—be it of whatever sort—to indicate that its object is *past*. That the organism reacts in a certain way, however complicated, is a present fact, and contains nothing about it which suggests that the object to which it adjusts itself was, and no longer is, real. The organism's action thus fails to give an account of the full significance of the knowledge of past events".¹⁶ A similar argument is put forward by Montague.¹⁷

Have there been any attempts on the part of behaviorists to meet the host of objections directed against their doctrines? Barring the few hand to

¹⁴ J. B. Watson. *Psychology from the Standpoint of a Behaviorist* p. 304.

¹⁵ B. Edgell: 'Memory and Conation' *Proceed. Aristotelian Society* 1919-20 vol. XX p. 208.

¹⁶ W. H. Sheldon: *Strife of Systems and Productive Duality* p. 212.

¹⁷ W. P. Montague: 'A Realistic Theory of Truth and Error' in *The New Realism* p. 272.

hand skirmishes engaged in by the philosophical members of the group we may say that the new movement was consistently dodging the issues raised by the opposite side; and busy with their loud protestations, its representatives did not deign to lend an ear to those who in their turn were voicing their protests against the unheeding *doctrinaires*. It is easier to frame a theory than to defend it. Its speciousness is usually not apparent except to the most critical readers, especially as behavioristic theory is usually invested with a stamp of simplicity. To take an instance: how many readers of Watson's earlier book will stop to inquire whether his explanation of animal learning on the basis of frequency and recency alone will hold water? To how many will it occur to ask whether the successful move is always the most frequent?

What prevents the animal from performing a wrong act several times either before taking the next step or after having done something else in the meantime? Watson has invoked the aid of the laws of probability, but these laws are inapplicable to a small series of trials where the animal fumbles and flounders with the possibility of its repeating a certain wrong move a dozen times, whereas the successful step would be taken only once in such a series, for trying ceases with the achievement of the task. Nor has Watson considered the experimental possibility of making the animal go through an

equal number of movements first under pleasant stimulation and then under unpleasant conditions, so as to see whether the subject does not after all learn to do the pleasant thing best. If pleasantness and unpleasantness play no part in the learning process, why should there not be an equal chance of either task being performed with the same degree of ease or in an equal period of time?

Need we be surprized when in actual experimentation on divergent lines from introspective psychology behaviorists have nothing to show? Simple as it was to test a given theory, the test remained nevertheless to be made.

After a decade of propaganda, let us ask what after all have the behavioristic experimentalists achieved in the human laboratory that psychologists of the older cast of mind from Wundt and Stumpf down to Münsterberg and Titchener with their introspective bias could not bring forth?¹⁸ There have always been a number of objective problems under investigation in the various psychological laboratories ever since their inception; and in fact some time before Wundt established the first laboratory, Vierordt, the physiologist, was conducting and directing many experiments which did not differ in method from those advocated by red-blood behaviorists of to-day.

Not all the sanguine utterances of a Watson can

¹⁸ M. F. Washburn: 'Some Thoughts on the Last Quarter Century in Psychology' *Philos. Rev.* 1917, vol. XXVI, p. 52.

convince us that the various laws of vision or perception could have been arrived at on a strictly behavioristic programme. It was while I was engaged on a laborious research dealing with the interference of voluntary impulses that I fully realized how worthless my objective kymographic records would have been without the detailed introspective protocols to explain them; and though the introspective results were assigned a comparatively small portion of the published monograph,¹⁹ their value was disproportionate to the significance of the objective conclusions, as was noted by one of the reviewers, a physiologist, by the way.²⁰

If the *experimenter is not taking account of the subject's introspection, we have a right to suspect that he is injecting his own introspection into the interpretation and analysis of the data.* Should we prove so obliging as to accept the decree that the business of psychology must be only to predict and control behavior, we cannot but maintain that the predictability as well as the control of human behavior is certain to be furthered by the knowledge of the thoughts, intentions, feelings—in short the mental states of the re-agent or subject, and that unless we

¹⁹ A. A. Roback. 'The Interference of Will-Impulses' etc. *Psychol. Rev. Monog.* 1918 vol XXV

²⁰ Jean Philippe: *Rev. Philos.* etc. 1920 vol. XLV p. 154.

"Mais la partie la plus intéressante de ce travail nous paraît celle ou l'auteur, pour compléter ce qui reste encore vague dans les données ci-dessus, recourt aux renseignements fournis par l'analyse introspective que chaque sujet pratiquait sur lui-même durant les expériences."

stopped to interpret behavior in terms of our own inner experience, our observations would remain without the slightest import. Moreover, if we attempted to adapt our behavior in accordance with our observations, the most serious maladjustments would attend our efforts. At this stage we ought to turn our attention to the crux of the question, the analysis of the concept behavior.

CHAPTER IV.

WHAT DOES "BEHAVIOR" MEAN?

CONCEPT OF BEHAVIOR—MEANING OF TERM—DOES BEHAVIOR APPLY ONLY TO ORGANISMS?—IS "OBJECTIVE REFERENCE" AN ITEM IN BEHAVIOR?—INTEGRATION NOT THE BASIS FOR A NEW SCIENCE—BEHAVIOR A FUNCTION OF ALL ORGANIZED MATTER

For some years past the concept of consciousness has been singled out as the storm-centre of many a polemic. We can readily understand the reason for it. The more established a view is, the more likely is it to be scrutinized by critics who by virtue of their accusatory attitude are generally held to be immune from the onus of proving the absolute satisfactoriness of their own substitute. Behaviorists have not felt the need of taking their catch-word to pieces; but now suppose we turn the searchlight on their central concept and inquire into the meaning of "behavior" as definably distinct from other terms.

In its most elementary setting behavior must surely connote a series of activities or processes. This definition, I think, may be amplified by adding that the group of processes must be regarded as a unit from the observer's point of view. Behavior, *ex vi termini*, cannot be restricted to any special class of objects. Socially the term has been em-

ployed as a synonym for deportment, but latterly it began to acquire a technical sense designating any observable change or group of changes. We may speak of the behavior of rubber under certain conditions, the behavior of proteins,¹ or the behavior of an atom and an electron.² The most typical kind of behavior is, let us grant, that exemplified by an organism, but it must not be supposed on that account that the terms behavior and organism are so inseparably bound up with each other as to render the former inapplicable to inorganic substances.

The stimulus-response relation which may be claimed as a requisite to the category of behavior has its analogue in the causal relation in the physico-chemical world. Seeing then that the denotation of behavior is of such a wide scope, what prevents us *ex hypothesi* from including all the various changes of matter under the general scheme of psychology? ³ At any rate we might leave room for

¹ J. Loeb: 'The Proteins and Colloid Chemistry' *Science* 1920 vol. LII pp. 449, 456.

² Comstock and Troland. *The Nature of Matter and Electricity* pp. 2, 21.

³ Perhaps that is what leads Hollingworth to conclude that "all sciences are studies of behavior" To retrieve the science of psychology he defines it rather awkwardly as "the science of the behavior of statistically variable experience". (H. L. Hollingworth: 'The Psychophysical Continuum'. *Journal of Philos. Psychol. & Sci. Methods* 1916 vol XIII p 187) Here we have again the notion that experience behaves, criticized in chapter III *supra*. It may be questioned too whether the subject-matter of psychology is the only field which is statistically variable, whether after all the one word

the *cell*, with its remarkable transformations and divisions in response to its natural stimuli, to be received under the roof of psychology.

It was perhaps in anticipation of this query that Holt stopped to marvel at the capacity of the components which go to make up the organism for integration. In several passages⁴ he has dilated on the concerted action of the entire organism which he considers a critical point in the evolution of the universe. His attempt, however, to draw a sharp demarcation line between the behavior of gun powder fired by a match and ordinary organic behavior will at once be recognized by the critical reader as a *tour de force*.

I am trying to solve my difficulty by referring to Holt's treatment of the subject because, to my mind, he has delved into the concept of behavior more deeply than any of his colleagues; and his conclusions, viz., (1) that behavior is marked by a "genuine 'objective reference' to the environment which is not found, so far as I can learn, in the inorganic, or in the organic world prior to integrated reflex response" and that (2) "this is the novelty which characterizes behavior" may be plausible enough to disarm criticism in some quarters, but I have no doubt that there will still remain a number

in the definition which reveals the nature of the science is not *experience*—a subjective thing—unharmful by the cumbersome attachment of "behavior".

⁴ E. B. Holt: *loc. cit.* p. 50 ff. pp. 154, 161, 169.

of skeptics who, like myself, will be unable to follow this differentiation. But for argument's sake, suppose we concede that "here if anywhere, evolution turned a corner" as Holt exclaims in his enthusiasm, the question is still in order why this turning-point should be set above the birth of consciousness, compared with which the organization of reflexes is a mere dent.

In fact we are not so certain that in all behavior there is discernible a genuine objective reference to the environment. Kinaesthetic sensations, or to use the terminology of the objectivist, proprioceptive stimulations cannot, properly speaking, come under that head. Or if we close our eyes, stop up our ears and shut our senses to all external stimuli, as we sometimes try to do when absorbed in deep thought, are we calling into play reflexes stimulated by the objective environment?

Does it not appear, too, that Holt is making too much of the circumstance that reflexes tend to integrate? It was natural for Sherrington to lay considerable stress on the property of nervous organization which he has so painstakingly investigated; and his noteworthy contributions to the field of physiological psychology are of course worthy of the recognition accorded them by both psychologists and neurologists throughout the world. But it may readily be appreciated that the mechanism of digestion, the processes taking place in gestation and parturition or the facts of circula-

tion and respiration may be just as exaltedly spoken of by the specialized physiologist as the subject of reflex integration. We may, with a certain amount of plausibility, claim that evolution has "turned a corner" when the process of reproduction was first mediated by the act of conception as contrasted with, let us say, oviposition. Evolution has passed through so many stages that there is always the danger of mistaking a notch for a corner, particularly when casting about for sharp lines of cleavage.

Pushing our inquiry still farther, we may ask whether the term "integration" is not merely a more technical synonym of the word "organization" which is universally manifest in the inorganic world as well as in the organic. The physicist will doubtless be able to discover the analogue of integration in the configuration of the magnetic field, and the chemist will likewise point to the geometrical properties of crystalloids and even colloids as corresponding to the much heralded property of reflex integration.

The upshot of this discussion is that there is no valid reason why the term behavior should be kept in reserve for acts carried out by an organism and not applied also to the processes going on in any kind of material which is experimented with or simply observed under conditions of change.

CHAPTER V.

WHAT CONSTITUTES BEHAVIOR?

WHAT IS A BEHAVIORISTIC ACT?—NEURAL PROCESSES AS TYPICAL INSTANCE—MUSCULAR AND GLANDULAR ACTION AS EARMARKS OF BEHAVIOR—HOLT'S GROSS BEHAVIORISM—DIGESTION A BEHAVIORISTIC ACT NO LESS THAN VISION—HOLT'S OBJECTIONS TO BETHE'S ATOMISTIC BEHAVIORISM—HOW INTERPRET A GIVEN ACT?—PURPOSE OF DOER ESSENTIAL FACTOR—CIRCUMSTANCES PARTIAL DETERMINANTS—ACT MEANINGLESS WITHOUT SETTING—SETTING ULTIMATELY REFERABLE TO INTROSPECTION—NO AGREEMENT AS TO UNIT OF BEHAVIOR.

In the last chapter I have concerned myself merely with the *concept* of behavior and its analysis, and the conclusion come to is that neither behaviorism nor psychology has an exclusive claim to the term "behavior". Such being the case, behaviorism as a science cannot be assigned to cover any special body of facts, but must become so diffuse and *verschwommen* as to include all the physical and natural sciences under its purview. The serviceableness of such a scientific octopus is not very obvious, but we can afford to act charitably and waive our previous conclusions regarding the applicability of the term "behavior". Granted then by special courtesy that behavior can refer solely to the acts or processes of *organisms*, what may we set up as our typical instance of behavior? Or,

to put the question in another form, when can it be stated with certainty that we have before us a case of behavior? This question is a most perplexing one for our radicals; and it is here more than in any other phase of behaviorism that their views appear to be at variance with one another.

If we lend any weight to the utterances of Max Meyer, then behavior must refer to the neural processes in the nervous system. If Watson's platform is accepted, we are to seek our criterion in the action of the muscles and the glands. Holt differing again stresses the grosser movements which the organism carries out, though in one place he calls attention to the fact that "muscle tonus and motor set are as much behavior as is the more extensive play of limb."¹

With so many possibilities of interpretation open, the investigator must surely find himself baffled in the endeavor to put his finger on just that process which we are to envisage as behavior, and to distinguish it from other organic processes which must be excluded from that category.

We shall notice too, as we proceed, that the grounds upon which the cause of behaviorism is bolstered up are gradually lost sight of as other exigencies appear and require a change of venue. It is naturally difficult to describe the color of a chameleon; but one course of action at least suggests itself: we may examine anew the *rationale* of

¹ E. B. Holt: *loc. cit.* p. 173

behaviorism and its claim to independence in the light of the proposed constituents or instances of behavior.

The new substitute for psychology was to differ essentially from physiology in that the reactions of the *whole organism were to be studied* in the former science, while in the latter, separate organs and their functions were under observation. To determine then the nature of behavior in the concrete, we must ask ourselves the very simple question, "What does an organism do?"—a question which is often repeated by Holt. Now it is obvious that a neural process (or even many neural processes) is not carried out by the organism as a whole. Nor can we say that the contraction of the muscles or the secretion of the glands brings into play *all* the organs any more than does the process of digestion. Robinson has already noted in his incisive, though rather brief, discussion of behaviorism that "if digestion turned out to be a process in which the whole organism was active instead of a process performed by the stomach, it would not *therefore* pass from the physiologist's to the psychologist's domain."²

In casting about for an answer to the question: "What constitutes behavior"? we cannot do better than to examine Holt's argument against the extreme mechanism of Bethe's views. Holt himself

² A. Robinson: 'Behavior as a Psychological Concept', *Proceed. Aristot. Society* 1918 vol. XVIII, p. 276

in the passage to be quoted has supplied us with the most effective plea against the evasion of behaviorists whenever the query just referred to comes up.

"To study the behavior of the bee" says Holt "is of course to put the question 'What is the bee doing?' This is a plain scientific question. Yet if we should put it thus to Bethe, his answer would probably be: 'It is doing of course a great many things; now its visual organ is stimulated and it darts toward a flower; now its olfactory organ is stimulated and it goes for a moment to rub antennae with another bee of its own hive; and so forth.' But this is not an answer. We ask, 'What is the bee doing?' And we are told, 'now its visual . . . and now its olfactory . . . ' etc., etc. With a little persistence we could probably get Bethe to say 'Why, the *bee* isn't doing anything.' Whereas an unbiased observer can see plainly enough that 'the *bee* is laying by honey in its home!'"³

We must understand then from Holt that the accomplished act, and not the separate steps instrumental in its accomplishment, is the *unit of behavior*. With this important result before us, may we not relegate muscle tonus and vaso-motor reactions in general to another department as not representative of what an organism *really* does? And above all, let us consider in what way the 'unbiased observer' acquires his information about the purport of a given act. Is it possible to determine

³E. B. Holt. *loc. cit.* pp. 77-78.

just what a person is doing without having some acquaintance with the *circumstances surrounding the acts*, among which are to be included the *purpose and the intention of the agent* as well as the instruments or tools with which the act is committed and the object upon which the act is performed?

To illustrate this point, without resorting to the fruitful field of jurisprudence, a savage on seeing a civilized man reading a newspaper—so Lévy-Bruhl related once in my hearing—told his friends that the white man was treating his eyes. It's reasonable to suppose that the savage was an 'unbiased observer'; and surely there was no mistake about his vision, but the behavior of the reader was misinterpreted through sheer ignorance.

In fact this condition obtains in our midst practically every day. Unless we are somewhat familiar with the mechanism which is set in operation, we are completely at sea as to what is happening. The ascertainment of any mode of behavior would depend on a number of factors, which in the last analysis can only be discovered as a result of introspection, or rather by applying the conclusions from past introspections to the particular case on hand.

Language just teems with sets of words which designate the same act, though the circumstances surrounding the operation are somewhat different. In fact, were it not for this human hankering to impart the purpose and the object of the act as well as to name it, the substance of our *thesauri*, not to

mention dictionaries, would be reduced to but a fraction of their present size. The application of water to our body is not expressed by the same word as the application of water to the floor or to a garment. Again we may *lave* a bruise, but we *rinse* a bottle, even though the modes of behavior in both instances do not differ so much as those of rinsing two bottles of different shape. The gentleman who, when asked about his occupation, referred to it as "massaging" floors might have been a behaviorist in his outlook, but the average person is fortunately discriminating enough to *give weight to the setting as well as to the act*.

Reverting now to the illustration of the bee which was categorically declared to be storing up honey, let us see whether we may not muster up an analogy in the human sphere that would again bring to the surface some of the stumbling-blocks of behaviorism. Consider the case of the equilibrist who is balancing a mass of humanity on the ball of his foot. Suppose we ask after Holt's fashion what the man is doing. One type of behaviorist might tell us just what the performer's muscles and glands are doing. Another might give us a kaleidoscopic description of the successive changes. The gross behaviorist will probably inform us that the equilibrist is performing an equilibristic stunt, but if the 'unbiased observer' notes in the original illustration that the bee is laying by honey, why may we not, with equal

justice say that the equilibrist is "*amusing the public,*" or perhaps "*earning a livelihood?*"

(The result of our inquiry as to **what** is the unit of behavior or what constitutes behavior has shown us that the question is fraught with insuperable difficulties and does not allow of a crystallized and clear-cut answer. Far from presenting the much vaunted advantage over mentalism, behaviorism gives evidence of decided weakness in this very regard which was considered its stronghold—objective treatment of data and universal concurrence as to the facts.)

CHAPTER VI.

THE LOGICAL GROUNDWORK OF BEHAVIORISM.

MAIN FALLACIES OF BEHAVIORISM—FORCING PSYCHOLOGICAL CATEGORIES INTO PHYSICAL PIGEON-HOLES—HOLT'S CIRCULAR PROCEDURE—DE LAGUNA LEARNS OF HER FEELINGS THROUGH THEIR EXPRESSION—HER PHYSICO-SOCIAL BEHAVIORISM—JENNINGS' FINDINGS IN ACCORD WITH TRADITIONAL PSYCHOLOGY—CONFUSION OF BIOLOGICAL INDIVIDUAL WITH PSYCHOLOGICAL INDIVIDUAL—OVERSIMPLIFICATION COMMON FOIBLE OF BEHAVIORISTS—MENTALISM VS. BEHAVIORISM.

Scientists are not as a rule required to show proficiency in logic as taught in the text book, but certainly it is expected of one who propounds or elaborates a new doctrine to consider whether he is not falling into the various pitfalls that have been trapping the average man from time immemorial.

If we stop to examine the arguments that the behaviorists have enlisted in their behalf we shall find most of the old age-worn fallacies lurking beneath them. What beautiful illustrations of the *non-sequitur* and *ignoratio elenchi* fallacies are enveloped in Watson's evidence¹ presented to evict imagery from the psychological theatre! Both Titchener² and Washburn³ have already dealt with

¹ J. B. Watson: *Behavior* pp. 17-18

² E. B. Titchener: *loc. cit.* p. 10

³ M. F. Washburn: *Movement and Mental Imagery* p. XII

this particular phase of Watson's doctrine, so that further discussion at this point is hardly necessary. In fact so inured are we becoming to the sight of flagrant logical blunders in that type of literature that ludicrous statements are given a semblance of significance and are treated in all seriousness. Thus if it is true that Watson "from introspection insists that consciousness has no existence in man or in animals" as we are told by Pillsbury,⁴ we should put him into the class of the brilliant individual who dreamt that he was wide awake, which gave him such a distinct shock that he woke up very briskly only to find himself sound asleep.

Watson, the *enfant terrible* of behaviorism, with his gratuitous assertions and flat denials, is of course the chief offender in respect to logic, but he stands by no means alone. If we were to single out some one sin that brands the behavioristic movement *ab initio*, it is that of begging the question and coolly taking things for granted that are as difficult to prove as for a camel to go through the eye of a needle. This fallacious mode of procedure is patent in most of the writings of the extreme behaviorists. Their very desire to limit the scope of psychology to a field which at most only overlaps it and their hankering after an objectivity which is in most cases lamentably inadequate to explain the phenomena under investigation, unless supplemented by intro-

⁴ W. B. Pillsbury: *loc cit.* p. 65

spection of some sort, betray the want of analysis in our radical camp.

To cite a mild instance, a colleague of mine, who is an avowed behaviorist, upon learning that I was conducting an experimental investigation on the factors of belief was rather taken aback at the thought that I should demand an introspective account of the subject's experience during the reading of the material. He felt certain it would be a safer plan to take an objective record of some phase of the subject's expression (tapping, breathing, blood pressure etc.). What inference I should be able to draw from the records without the elucidation of the subject undergoing the experience, I fail to see—this quite aside from the many disturbing factors bound to crop up in such expression methods.

Behaviorists may appreciate the fact that all observation requires interpretation,⁵ but they are not ready to admit that this interpretation must necessarily resort to introspection as guide. The ill-advised attempt to force the psychological categories into physical pigeon-holes may bring success, but of the kind that came to the peasant who had just managed to train his dobbin to get along without fodder when the stubborn animal died.

A fine illustration of the behavioristic *petitio principii* is afforded by Holt's facetious but in-

⁵ B. H. Bode: 'Consciousness as Behavior' *Journal of Philos. Psychol. & Sci. Methods* 1918, vol. XV p. 452.

effective onslaught against psychologists who appeal to introspection in order to interpret a man's actions. "If one sees a man enter a railway station, purchase a ticket, and then pass out and climb on to a train, one feels that it is clear enough what the man is doing, but it would be far more interesting to know what he is thinking. One sees clearly that he is taking a train, but one cannot see his thoughts or intentions and these contain the 'secret' of his actions." Holt proceeds further to show that the man who was about to close a real estate transaction could not have satisfied the introspectionist's curiosity as to what he was doing by disclosing his thoughts to him. And Holt is led to conclude that "Thought is often a mere irrelevance, a surface embroidery on action. What is more important, the very best that the man could have told us would have been *no better* than what we have learned by watching the man. At best he could have told us, 'I am intending to buy a house and to get my furniture in today'; exactly what we have observed. And if he told us his further intentions, these in turn could be as completely learned by watching his movements; and *more* reliably, since men do both think and speak lies."

In this short passage there reside four fallacious implications, at least one of which is crucial to our controversy. (1) It is assumed that such an elaborate piece of behavior as buying a house and going through all the necessary steps of the transaction

could have been performed without the aid of thought. (2) We are led to understand that the psychologist of the orthodox class insists upon the simultaneity of the intent and the act intended. (3) We are to suppose that one's intention can with greater reliability be detected from one's acts than from one's thoughts on the ground that men "think" lies. Personally I can't conceive of a thought or an idea which is intentionally false. Certainly a man may invent a lie, but "inventing a lie", when analysed out, means that its author has *resolved to go through a certain mode of behavior*. There is nothing true or false about the thought, but about the statement which follows or the act subsequently performed. When one is leaving for the club and says to himself "I am going to tell my wife I have an important business meeting to attend", we can hardly describe the artful dodger's intention as thinking a lie. Moreover Holt's suspicion of thought gives rise to the belief that acts are never deceitful while thoughts may be intentionally false. This view it seems to me is indefensible on the basis of common experience. In the first place, *since thoughts are private, there would scarcely be any purpose in "thinking" lies*, and in the second place since other people's thoughts are not directly accessible to us, we should have to take the testimony of the person making the self-incriminating statement as conclusive evidence—a state of affairs which is not altogether satisfactory. (4) Holt wishes to

give the impression that an intention is more faithfully reflected in acts than in thoughts, which means that we should gain no more information by having access to the *thoughts* of a hypocrite than by observing his actions. This matter is really pivotal to behavioristic doctrine, and it is furthermore important in its bearing on ethics, hence more will be said on this score in another connection.

Of course it must be kept in mind that we are not finding fault with any particular author. It is the underlying basis of behaviorism which is to be condemned as thoroughly fallacious; and the dubious modes of logical procedure are prompted by the mechanistic bias so pronounced among behaviorists. In this circle we find the old materialistic arguments and point of view revived in a subtler though no less untenable form.

If we are looking for a *hysteron proteron* sample of reasoning, we are certain to find it in G. De Laguna's thesis that for the most part we become aware of our emotions through their expression—that we know ourselves to be angry because “we catch the echo of our own raised voice or become aware of our menacing attitude towards our companion.”⁶ This is indeed going the original James-Lange theory one better. Why not, on the same principle, say that we become aware of the unpleasantness of a sensation by the wry face we make?

⁶ G. A. De Laguna: ‘Dualism in Animal Psychology.’ *Journal of Philos. Psychol. & Sci. Methods* 1918 vol. XV pp. 621–622.

In another passage the same writer argues "But it seems clear to me that what we mean by 'being angry' is not the enjoyment of a subjectively identifiable mental process. No psychologist, I venture to assert, ever discriminated such a process and mentally labelled it 'anger' for purposes of scientific references and comparison."

We might agree that "being angry" is not an *enjoyment*, but that it is a subjective *experience* no less identifiable by the subject than is its motor expression, I should think no one but a behaviorist could deny; and, for my part, I have yet to learn of the purely objective methods by which a certain degree of intensity of anger could be determined more accurately than by the introspection of the experiencing subject. How much more at ease the maid feels on ascertaining that the raised voice and menacing attitude of her mistress did not really bespeak the mental state of anger.

Moreover if external behavior is to determine the state of anger one is in, then why regard anger as our standard as shown by the fact that different modes of behavior are still subsumed under this one primitive category? We find thus that what seems universally significant is the *state of anger* while the outward manifestations are secondary. Should anyone attempt to enumerate the various expressions attendant on such a state, even the behaviorist would be constrained to translate the combination of details into "anger", before the description could

take on any definite meaning. If the term anger then is our ultimate to which different modes of behavior are to be referred, what is more reasonable than to regard the mental state as the standard and its motor expression as the variables? Consequently, if we became aware of our state of anger through our raised voice and menacing attitude, we should be discovering the standard—and in fact measuring it by means of our variables.

In another article, the same writer is at pains to prove that fear is “not a hidden feeling cherished within one’s breast but *that* feeling which is inspired by determinate objective conditions and which impels him to characteristic expressions and acts.”⁷ And yet a few pages earlier, she speaks of the variety of ways in which fear may manifest itself: “in flight, in hiding, in shrinking, sometimes in ‘freezing’ or a complete paralysis of all activity, even vocal utterance. Sometimes it impels the individual to seek the protection of some other individual . . . or again it inspires to frantic attacks on the inciting objects.” In what way then is the reaction characteristic or determinate? And as to the objective conditions, is it not commonly known that a situation that would make one individual quake might only amuse another or infuriate a third? Far from finding any determinateness either in the objective

⁷ G. A. De Laguna: ‘The Empirical Correlation of Mental and Bodily Phenomena’ *Journal of Philos. Psychol. & Sci. Methods* 1918 vol. XV p. 541.

environment or in the specific reaction, on the strength of which our emotion is to be labelled, we should be entirely at sea were it not for that mental state that each one recognizes in himself as fear.

Jennings has noted that the same kind of stimulation will not always bring about the expected sort of reaction even in such primitive organisms as *stentor* and the flatworm. "Sometimes higher animals and man are thrown into a 'state of fear' such that they react negatively to all sorts of stimuli that under ordinary circumstances would not cause such a reaction. A similar condition of affairs we have seen in *stentor* and the flatworm. After repeated stimulation they react negatively to all stimuli to which they react at all".⁸ Jennings' interpretation is undoubtedly based on analogy and ultimately on introspection. In the absence of introspection to begin with, no matter how extensive the measuring and how great the number of careful observations there is no sure indication of the kind of emotion experienced.

Another vicious practice that behaviorists are guilty of consists in changing the aspects of psychological phenomena by coloring the medium of vision. In other words mental facts are brought under some non-mental scheme. An illustration of this logical (or rather illogical) railroading may be found in Abbot's attempt to explain the psychic

⁸ H. S. Jennings: *Behavior of Lower Organisms* p. 332.

from the biological point of view, with the result that mind is made out to be a function of the brain and the individual, just as respiration is the function of the lungs and the individual. The confusion of different functional levels is further palpable in the amphibological use of the term "individual" as appears in this sentence: "It is the *individual*, not the brain, that thinks or exercises the other psychic activities we call mind, just as it is the individual not the lungs, that breathes, or the individual that runs, not the legs." ⁹ This statement may of course meet with objections on grounds involving the notion of causality, but the more specific quarrel I should have with the writer centres about the identification of the psychological individuality—the unity which synthesizes every new incoming experience and relates it to a fund of past experiences—and the biological individual which is an organism exhibiting certain well-defined phenomena but in no way identical with the mind, consciousness or experience.

It is difficult to see how consciousness can be anything from a biological, physiological or physical point of view. Why may we not turn the tables on biology and begin our preamble in some such manner as this: "From a psychological point of view life (or growth) is nothing but . . ."? The unelevating humor of reducing thrilling music to the

⁹ E. S. Abbot: 'The Biological Point of View in Psychology and Psychiatry' *Psychol. Rev.* 1916 vol. XXIII p. 119 ff.

brushing of horse hair against catgut is *apropos* of the oversimplification evinced in some quarters.

Such is the logical carriage of behaviorism in general, and though as a movement it is constantly appealing to scientific method in combatting *mentalism*,¹⁰ its votaries have not always given evidence of being *au fait* with the methodological principles underlying all science or of appreciating the main issues involved in the controversy.

¹⁰ The word "mentalism" most appropriately designates the view that psychology is concerned with mind or consciousness and that there are mental elements in our world of reality which are every bit as worthy of investigation as the chemical elements so indispensable in the realm of science.

The word parallelism which has frequently been employed as the opposite of behaviorism is hardly suitable considering that neither interactionism nor epiphenomenalism is a synonym for behaviorism, though each of these terms has been currently used in contradistinction to parallelism. Introspectionism, again, is not quite satisfactory for our purpose as the term suggests undue emphasis on introspection to the exclusion of objective treatment.

CHAPTER VII.

THE PHILOSOPHICAL BASIS AND OUTLOOK OF BEHAVIORISM.

INDIFFERENT ATTITUDE OF BEHAVIORISTS TOWARD PHILOSOPHY—
PHILOSOPHICAL AUDITING NECESSARY IN EVERY SCIENCE—IS BE-
HAVIORISM PURELY MECHANISTIC?—WEISS CLAIMS MENTAL SERIES
ANOTHER NEURAL SERIES—BELIEVES BEHAVIORISM IS MONISTIC;
DUNLAP THINKS IT PARALLELISTIC—NO SOLID GROUNDWORK FOR
MOVEMENT—SOME PHILOSOPHERS BEHAVIORISTS BUT BEHAVIORISTS
UNPHILOSOPHICAL—MUSCIO'S CRITICISM—TWO TRENDS IN BE-
HAVIORISM: (A) MATERIALISTIC (B) LOGISTIC.

Possibly it is doing behaviorists an injustice to inquire about the philosophical assumptions underlying their doctrine. Some will frankly admit that philosophy is outside their realm. Others will take a special delight in stating that behaviorism is anti-philosophical and will add that therein lies its merit. As a rule, those scientists who proclaim their anti-philosophical leanings thereby betray a distinct bias in the direction of philosophy and are only too eager to cast their own crude views upon the philosophical sea and float them under scientific colors.

Ever since psychology was fortunate enough to enter the experimental state, and especially after its *liaison* with commerce and industry, it has been gradually drifting away from philosophy, so that we may say that it has by this time almost com-

pletely emancipated itself from the reign of the abstract. And yet, it is erroneous to suppose that there is no point of contact between the concepts and problems of the elder discipline and its offspring. In every science there comes a time when philosophical auditing is not only appropriate but imperative; and psychology, far from being the exception, rigidly illustrates the rule.

The behaviorist, then, might proclaim vociferously his aloofness from philosophical inquiries—his attitude towards mental facts discloses his position philosophically and calls for more definite information.

One might have thought that the behaviorist is a mechanist pure and simple, explaining mind in terms of matter, but certain behaviorists in philosophical quarters will object to such a broad statement. Perhaps we had better take recourse to the discussion of one of the most articulate behaviorists on this subject. In drawing the line carefully between physiological psychology and "behavior psychology", he points out that while the former is dualistic, the latter is based on monism. "For the behaviorist the mental series is regarded as only another neural series."¹ This sentence sounds truly paradoxical. We had reason to suppose that on behavioristic principles, the mental series was to

¹ A. P. Weiss: 'The Relation between Physiological Psychology and Behavior Psychology.' *Journal of Philos. Psychol. & Sci. Methods* 1919, XVI p. 627.

be entirely ignored, but now that it is to be regarded as another neural series, it surely is our business to examine this series very minutely, whatever name we choose to call it by.

Another paragraph in the same article is even more baffling, not on account of the cogency of the argument but because of the footlessness of the assumptions. Here we are told that "the postulation of a special mental process as distinct from the physical, the behaviorist regards largely as the introduction of a 'thing in itself' concept. If neural activity alone can become available for science, why insist that there is 'something else' which can never be directly observed or investigated?"

As a commentary on these two sentences, we should (1) deny that the mental fact is *postulated*, (2) declare the analogy between Kant's famous limiting concept and the immediate fact of awareness to be far-fetched, and (3) question the accessibility of all neural activity to science. We shall see presently that we know a good deal more about our own and other people's intentions from the mental side than from the approach of neural activity. Again the behaviorist must be reminded that if it were not for the *mental series which we observe and interpret as mental series*, the physical facts or neural activities would have no meaning for us.

On Weiss's claim, may the physicist not contend with equal cogency that to talk of a neural series in

addition to the purely physical series of air or ether vibrations is to introduce a superfluous factor which can easily be equated with the latter series?

But without entering into further controversy over Weiss's assumptions, let us confine ourselves to the broad question of the philosophical basis of behaviorism. Weiss, we have seen, has given the movement a monistic setting. Now comes Dunlap whose inimical stand against introspective psychology should logically have placed him automatically in the ranks of behaviorists—now comes Dunlap with the revelation that "behaviorism depends on the theory of parallelism between 'mind' and 'body'." ² It does not stand to reason that behaviorism is based both on a monistic and a dualistic philosophy, and if we were to adjudicate the matter, no doubt monism is the system which could more readily be linked with behaviorism.

Indeed, it is a more radical monism than we have hitherto known that behaviorism rests on; for the monistic systems that we are acquainted with from the history of philosophy have, at least, indicated that there were two separate ranges of phenomena to be explained. For behaviorists, however, the mental series is not important enough to require an explanation.

The lack of a solid groundwork is probably the cause of the sketchy appearance that behaviorism

² Knight Dunlap: *Mysticism, Freudianism and Scientific Psychol.* p. 122.

presents. Even if we should not be looking for a well-knit system, we may at least expect to find in the writings of the leading behaviorists an organized and consistent body of facts and not a collection of *membra disjecta* held together by means of wires. Odds and ends taken from several sciences are pieced together in a psychological framework and labelled behaviorism. That is the criticism I should offer against Watson's most ambitious attempt. It is not from a dearth of problems that behaviorism suffers, but from a paucity of ideas to interpret the results properly and relate them to the sphere of human experience.

Let it not be understood that behaviorism is not sponsored by anyone on the philosophical side. In a previous chapter we have seen that both among the pragmatists and the neo-realists the behaviorists have allies, but it seems clear that any philosophical intrenchment of the behaviorist camp must be carried out not by outsiders who are apt to burrow along side-paths but by members of the same camp. So far, however, the only one of their number who has seriously undertaken to obviate difficulties in the path of their doctrine is Holt, and with what success we have had occasion to note earlier in the book.

No one should expect the behaviorists to turn at will into metaphysicians, but surely we may exact of them a modicum of information on their own antecedents; we may, at least, demand some light on

the *rationale* and meaning of their fundamental concepts. So far they have chosen to take a plunge in *medias res*, cutting themselves off from their at least firm and secure moorings. "But," to quote Muscio, "at the present time, the psychologist who possesses a conscience at all metaphysical,—who proceeds at all metaphysically in the sense that he tries obstinately to think clearly and consistently,—tends to wince at formulations of psychological principles which seem to manifest not merely haste, which is natural enough in so commercial an era, but an almost innocence of metaphysics. The present psychological situation, in brief, is one in which principles of psychology deserve special attention".³

There can scarcely be any doubt but that behaviorists like Watson must hark back to their ancestor Hobbes for a philosophical formula which reduces everything to matter and motion. But while Hobbes saw at least the necessity of reducing mental states, thereby avowing their existence, Watson is skeptical as to whether there is anything to reduce. Weiss, on the other hand, assumes there is an equation between the two different series of processes, and on that ground proceeds to discard one half of the equation.

The realist wing, which is bone of empirio-criticism and flesh of radical empiricism, will of

³ B. Muscio: 'Psychology as Behaviorism'. *The Monist* vol. XXXI 1921, p. 183.

course be chary about claiming for itself a lineal descent from Hobbes, as will of course the pragmatists, whose antecedents seem to have been cast in a logistic mould. In general it may be said that the work of Richard Avenarius in Switzerland, Ernst Mach in Austria and the altogether too little recognized Shadworth Hodgson in England has exercised a considerable, though indirect, influence on modern radical views in psychology, thus contributing to the establishment of behaviorism.

Part III.

PRACTICAL: APPLICATIONS OF BEHAVIORISM.

CHAPTER VIII.

POSSIBLE APPLICATION OF BEHAVIORISM.

VERIFICATION OF NEW DOCTRINE BY APPLICATION TO LIFE—WHOLE SYSTEM OF SOCIAL SCIENCES, LITERATURE, EDUCATION, ETC., DEPENDENT ON MENTAL STATES—MENTAL REFERENCES MUST BE SUPPLANTED—ATTEMPTS OF ANIMAL OBJECTIVISTS—BEHAVIOR CONTROLLABLE IN A GENERAL WAY HENCE DOCTRINE PARTIALLY APPLICABLE IN APPLIED PSYCHOLOGY—MAN IN THE STREET NOT A BEHAVIORIST—AUTOMATIC SWEETHEART NOT ACCEPTABLE TO MOST PEOPLE—ART MEANINGLESS EXCEPT ON MENTALISTIC BASIS—DIFFERENCE BETWEEN OLDER AND MORE MODERN TYPES OF LITERATURE—WHY SHOULD IMPLICIT BEHAVIOR BE MORE IMPORTANT THAN EXPLICIT BEHAVIOR?

In the progress of science the rule has been laid down that any new and revolutionary doctrine must in order to be accorded a measure of recognition, satisfy the whole structure of received facts or else explain them in such a way as to preserve the unity of science. It is something similar that we demand of the behavioristic point of view. Inasmuch as behaviorism proposes to ignore all reference to mental states or consciousness, it is incumbent upon its protagonists to indicate how we can change the terms, and indeed not the terms so much as the concepts employed in various disciplines, so that only the "mechanical function of the environment and the reaction system" will form the point of reference in all discussions relating to law, medicine, art, ethics, education, etc.

It must be remembered that the suggestion put forth here is not to the effect that our scientific terms must be brought into conformity with the modes of expression employed by the man in the street or that they must fit his categories. The astronomer will not take cognizance of the way the man in the street chooses to think about the celestial bodies. Nor does the physicist mind the curious notions and beliefs about the properties of substances current among the untutored classes. But when our whole structure of civilization rests on a foundation which is coincident with present-day psychological tradition, it behooves the innovator either to modify his stand or else indicate how this foundation can be superseded without causing the *débauche* of our whole system of knowledge. The copious references to consciousness and mental states in law and ethics, the abundant use of such terms as ideas, feelings, will, mind etc., in literature, the psychological aims of the educator, the pre-suppositions of the alienist, render it necessary for the behaviorist to supply us with a new set of working principles. If we were able to get along just as well without reference to mental states and obtain equally good results in the various endeavors of man, there certainly would be a strong case for behaviorism, but so far any attempt made to override the accepted notions of traditional psychology and its fundamental concepts has proven abortive. We shall still go on talking about training the mind

rather than about adjusting the nervous system, and we shall, as ever, continue to make use of the terms intelligence, dementia, amentia, and psychosis, no matter what manœuvring is done to create a more objective terminology.

One is reminded at this point of the efforts of certain objectivists, particularly Nuel, who may be considered allies of the behaviorists, to steer clear of a terminology implying the existence of sensation, imagination etc. In Nuel's book, we come across a heading like "Somatic motor valences of photo-receptions,"¹ or such terms as icono-projections and icono-reactions. In spite of the numerous neologisms introduced, Nuel has not been able to see his way clear to rejecting all mental references. But does it not stand to reason that once a word like perception *is* smuggled into the exposition, we might as well resort to it as to other strictly psychological terms *whenever the need arises*, without making a roundabout trip only to arrive at the same destination?

To revert to our possible applications of the doctrine of the new school, we must concede that a narrow strip of applied psychology can be operated on a behavioristic background. The applied psychologist in the restricted sense of the word asks himself the question "What must I do, in order to secure a given result?" Here and here only are we on behavioristic

¹ J. P. Nuel: *La Vision* p. 144.

territory. The selection of employees, the writing of an effective advertisement, the forcing of a confession from a prisoner, the inculcating of a principle through repetition—all these activities may be carried out and the achievements won by following certain rules and without any specific knowledge about the subject matter of traditional psychology.

Successful men and women have always been able to predict in a general way and control² the behavior of others, but need it be pointed out that these people were much less bothered by behavioristic conceptions and pretensions than behaviorists are by their bugbears of consciousness? What they were aware of was the fact that they were endeavoring to appeal to the emotions, or that they were seeking to call forth ideas of one sort or another. The man in the street whom the innovator usually introduces as an ally is as a rule innocent of the conspiracy, and if there is a *prima facie* connection between the behaviorist and the man in the street, it is only because the former is not employing the term 'behavior' in the same sense as it is used by the layman, who shows no understanding of muscular contractions and glandular secretions, delayed reactions and motor

² As J. R. Kantor, a vociferous behaviorist (certainly an anti-mentalistic) remarks "The only predication possible in human behavior is the very simple anticipation of a possible uniformity in action in response to phases of experience consciously abstracted from a total situation. Nothing further than this is possible, since human actions are indefinitely more than mere muscular and glandular function." (Psychology as a Science of Critical Evaluation, *Psychol. Rev.* 1919, vol. XXVI p. 9.)

adjustments. Behavior to him is akin to, if not synonymous with, conduct of the normative kind.

The man of affairs who is invoked by the behaviorists to bolster up their case may truly be exonerated of his charge. It is correct to say he has been dealing with human behavior, but with behaviorism as a doctrine he has no point of contact. As a matter of fact, in our personal relationships we are *interested in a man's behavior only because it is a symbol of what he is*. There may be some people who could prize the services of mechanical appliances just as highly as if they were rendered by a friend of flesh and blood, but how many are there who could so give the *cong  * to their sentiments and human traditions as to treat an automaton as if it were possessed of mind?

In a controversy with Marshall, Bode declares that one should not object to an automatic sweetheart provided she behaved in every way as a real sweetheart, ministering to one's wants, etc.³ The instance is unfortunately too fantastic to be threshed out in anything like a conclusive manner. Let us, however, try to imagine what our state of mind would be like and how our attitude would change towards our sweetheart if we discovered, through some Divine power, that our object of affection, though constant and unerring in her behavior, was destitute of mind, that she did not understand the

³ B. H. Bode: 'Consciousness as Behavior' *Journal of Philos. Psychol. & Sci. Methods* 1918 vol. XV p. 451.

import of a single one of her actions, but that all her movements were regulated through some inconceivable mechanism.

Turning our attention in another direction, suppose we decided one fine day, à la Watson, that we did not know what consciousness, perception, image, will, etc., meant. What, then, should art as human expression mean to us? Expression of what?—of reflexes, of conditioning, of habit formations, of tracings of the musculature? No one would step forward to make so puerile a claim. It is human perceptions, feelings, thoughts, emotions, fancies and the like that are expressed in the music of Bach and Beethoven, in the paintings of Raphael and Rembrandt, in the dramas of Shakespeare and Calderon, in the sculpture of Phidias and Michel Angelo, in the poetry of Homer and Dante. We may go a step farther and contend that our appreciation of the great masterpieces of the world's art in large part hinges upon the *personality* of their creators, be they ever so obscure as in the case of the great Greek epic bard. Should it be proven *per contra* that the great works of genius were not productions of the mind, but were mechanical reproductions, how great would be our disappointment, how our enjoyment would dwindle! Is not the gulf between photography and painting or between journalistic reporting and standard fiction one between mere behavior and mental expression?

Literature offers us even a better illustration.

The farther we advance in our taste, the more keenly do we appreciate the type of novel or play that portrays characters and describes states of mind. Plot becomes secondary, and the mere narration of acts, no matter how admirably it is carried out, is apt to tire the cultured reader of to-day. With all the ingenuity of plot, voluptuous imagery and elegance of expression to be found in Boccaccio's *Decameron*, the reflective person will be more deeply impressed by fiction like Hugo's *Last Days of a Condemned Man* or Andreyev's *The Seven that were Hanged*. What passes in the mind of a suicide directly prior to his fatal step may be a matter of only a minute's duration, but the modern novelist like Tolstoi will deem it important enough to devote many pages to the mere mental state while the act itself is barely mentioned.

James Joyce, to cite an example of a modernist, has taken 730 pages with about 700 words to a page, making a total of over half a million words, to describe the passage of less than 20 hours, which means really the procession of a number of mental states or, let us say, a series of *implicitly* behavioristic acts. The *explicit* behavior occurring in his *Ulysses* could be described in a few pages. We read and we are spellbound by the psychological situations in Hamsun's *Hunger* not because of the neuro-muscular or stimulus-response processes that these situations involve, but in virtue of the mental states *per se*. We say to ourselves "How exqui-

sitely portrayed!" "How powerful an emotion!" "What original thoughts!" Of the neuro-muscular correlates we know nothing and care just as little about them. No amount of description of the emotions in an objective light, from the classical performance of Darwin down to the many behavioristic attempts scattered in the American periodicals for the last few years, will afford us so much as a fraction of the artistic appreciation resulting from the reading of a psychological situation in Tolstoi or in Anatole France. It would be possible to show too that even in Shakespeare the sublimest passages are those in which mental states are depicted—a moral conflict, a thwarted desire, an unspeakable grief, a hope against hope, revenge, jealousy and the like.

I can hear some of our psychological revolutionaries retort, "But what Tolstoi or Hamsun is describing and what gives us the characteristic æsthetic reaction is no more and no less than *implicit behavior*." This rejoinder might possibly pass muster if it were made clear to us *why implicit behavior should play a more prominent part in the world of art, indeed in all human endeavor, than explicit behavior. The most natural phase of any object is surely its explicit character*. If no qualifiers were affixed to behavior, every one would indubitably take the term in the sense of explicit behavior. Implicit behavior, it will be conceded on all hands, does not constitute the characteristic form of the generic term, hence it is

for our opponents to explain why the less characteristic phase should receive such attention to the depreciation of the more characteristic form, unless it be that the former's glory is due to its association and correlation with mind.

CHAPTER IX.

IS ETHICS COMPATIBLE WITH BEHAVIORISM?

KINSHIP OF BEHAVIOR AND ETHICS—CONSCIOUSNESS A PRIME CONDITION OF CONDUCT—BEHAVIORISTS AS A CLASS RETICENT ON ETHICS—HOLT'S ENDEAVOR—INTEGRATION OF WISHES WITH MINIMUM OF CONFLICT—HOLT'S DIFFICULTIES—ALL NEUROTICS MUST BE VILLAINS—ETHICAL MAN RESPONDS TO IDEALS NOT TO ENVIRONMENT—MORALITY PRESUPPOSES CONFLICT AND SUPPRESSION.

For many readers there exists no problem about linking up ethics with behaviorism; for is not ethics the science of conduct, and is not conduct at least a phase of behavior? On this reasoning, no two fields of human thought can be more related than those whose compatibility we have just called in question. Certainly positivistic writers like Hobhouse and Westermarck who are concerned with the description of morals in evolution are beyond the reach of our cavils so long as they confine themselves to their avowedly restricted task. Our misgivings come to light only when we are confronted with the necessity of essaying a theory of ethics or propounding a governing principle to act as a norm. In short it is when we begin asking ourselves, "What are we to do under such and such circumstances?" and not, "How have the savages of Borneo acted two hundred years ago?" that the rub comes in. To put our difficulty another way: Can we reasonably at-

tach culpability to any person on the basis of mere integration? Whom or what are we blaming in that case? The reflexes? The neurones? The secretions? Is it really possible to dispense with consciousness as a center of reference and above all as the *prime condition of conduct*?

So far behaviorists, with one exception, have remained suspiciously reticent on this point, though it demands peremptory attention. Hitherto even hedonists and sensationalists of the first water have been constrained to exploit elements of consciousness such as "pleasure and pain" in developing their systems. Neither Hume nor Bentham, neither Mill nor Huxley has dreamt of reducing ethics to a department of physiology. That conduct involves neuro-muscular processes is true enough, but that these neuro-muscular processes are appraisable as moral or immoral in the absence of a specific mental content, antecedent to the behavior we term conduct, is an indefensible thesis considered from any angle. But this phase of our critique will be amply dealt with in the chapter on the relation between behaviorism and jurisprudence. In the meantime let us inquire into the positive treatment of behavioristic ethics as attempted by Holt.

Holt, the only one of his school who has not fought shy of the formidable task of conciliating two contradictories, has endeavored to light one candle with two matches. It is evident that his *Freudian wish* was to write on ethics, though the title of the

book appears as *The Freudian Wish*, while the *latent content* of the work is an exposition of behaviorism. So deftly intertwined are the fibres of Freudian theory with the behavioristic tissues that it is almost impossible to apply the scalpel to the one without cutting into the other. Off-hand it is not easy to ascertain whether the Freudian doctrine is adapted to fit the author's behavioristic proclivity or the behavioristic exposition broadened to include Freud's theories. Happily Watson, who whirls in a swifter eddy of the current, apprizes us of the safety of Holt's natations in the behavioristic sea,¹ from which utterance we may conclude that Holt's elaboration of a behavioristic ethics is representative of his class and not merely his own expression qualified by Freudian exigencies.

Since the physiological wish is the unit of ethics, maintains Holt, ethical behavior consists essentially in the integration of these wishes (in the Freudian sense) with a minimum of conflict or friction.² In order to obviate the natural objection to a behavioristic ethics that hypocrisy or manifest inconsistency between your thoughts and actions need not be condemned if behavior is our only criterion and guide, the author of the *Freudian Wish* is obliged to veer somewhat from his original position when he declared that thoughts were merely frills, often ir-

¹ J. B. Watson: 'Does Holt Follow Freud?' *Journal of Philos. Psychol. & Sci. Methods*,—1917 vol. XIV pp. 86, 90.

² E. B. Holt: *The Freudian Wish* p. 142 ff.

relevant; and he now hits upon the idea of ascribing to this very conflict between thought and action most of the nervous disorders of the age, thus implying that the penalty for hypocrisy is invariably consequent upon the sin.

But Holt is too critical to ignore the fact that many who are thought to be virtuous are yet "ill of soul, while on the other hand many wicked persons are perfectly healthy and most desperately cunning." If right is, as that author claims, "conduct, attained through discrimination of the facts, which fulfills all of a man's wishes at once, suppressing none"³ Holt's anticipated objections are real stumbling blocks which no amount of denying will remove. And that is all Holt undertakes to do. "All the curious inadvertencies and stupidities of the so-called virtuous, and all their ailments which by any possibility can be called mental, are found, when they are analyzed and understood, to be quite as much departures from virtue, in the broader sense of the term, as they are departures from health or wisdom," is the way in which the situation is summed up. "It is thus the *apparently* most virtuous who are the *most* often afflicted with mental disabilities of one sort and another. . . . But the genuinely virtuous, those who have integrated away every suppression, are also the genuinely healthy of mind."

But how are they to rid themselves of their sup-

³ *loc. cit.* pp. 130-131.

pressions? Are we to infer that the most virtuous inhabitants of the earth are animals, and persons who resemble them in their impulsiveness? Surely no human being with fine sensibilities can in this regard compare with the self-satisfied pig. And what are we to think of those individuals who have inspired William James to write his *Varieties of Religious Experience*? What of Petrarch, Dante, Beethoven, Molière and Goethe, the latter of whom seems to have violated the law of integration in open defiance of both Freudian and behavioristic ethics, if his plaint

"Zwei Seelen wohnen, ach, in dieser Brust!

Die Eine will sich von der Anderen trennen;"

is symptomatic of his character? To be sure, men of genius are not necessarily paragons of virtue, but to place on a higher level some smug peasant or shop-keeper for no other reason than that the latter are less bothered by mental conflicts is tantamount to declaring an unbridgeable gulf between greatness and virtue. From what we know of the lives of great intellects it would be easier to accept Carlyle's dictum "Man's unhappiness comes of his greatness" than Holt's philosophy.

Most educated people have been in the habit of thinking that Kant's system of ethics with its categorical imperative is excessively rigid, but now that we are to be condemned for impulses, desires or cross purposes, even though we manage to frustrate or harmonize them in the end, the precept of

obeying the call of duty sounds like a mild injunction when compared with the behavioristic code which would not countenance even the occurrence of mental conflicts. This novel "do or die" morality which is linked, on the one hand, with psychoanalysis and on the other with behaviorism is fraught with too much of the absurd to be taken seriously, not only because the saint is, according to its tenets, transformed into a villain, but also on account of its neglecting the happy medium for either of the extremes, as is revealed by the *dictum* "The downright wicked person sometimes has the *virtue* of not being a hypocrite" ⁴ as if hypocrisy consisted in not yielding to one's evil propensities or immediate impulses, or, what is more unreasonable, in allowing sordid thoughts to crop up.

There is still another vulnerable spot in a behavioristic ethics. In ethical conduct as in any other type of behavior, we should naturally expect the response to be a reaction to the environment. The stimulus is always from without; and whether it is a tangible object like food or an abstract idea like honor that the moral agent is reacting to, the act must be a function of the environment, environment in the literal sense of "outside the self." But what ideals exist outside of us? When Luther, facing the Council of Worms, doggedly maintained his precarious position, what ideal did he perceive before him in his cheerless surroundings amidst his

⁴ *loc. cit.* p. 145.

stern judges? Holt talks of honor, virtue and truth as universal entities, presumably on the strength of his neo-realistic philosophy. Anybody but a neo-realist could hardly accept this designation. Truth is neither an entity nor is it universal, except in some technical sense, like the Platonic, which requires explanation. If anything, truth, one should say, is one of the least universal facts. Hence, we fail to make out (a) why reacting to truth as a stimulus should represent a higher order of conduct than the response to a practical situation such as eating mushrooms, and (b) how an ideal like truth can be external to the agent or exist in any other form than a concept. Moreover, granted that truth *is* universal, why not set up the proper response to a mathematical proposition as an act of ethical conduct, since there can be no doubt but that mathematical truths are at least just as valid as any other truths? A 'truth' for which a scientist or philosopher is in one age willing to die, may afterwards prove a chimera, while a mathematical truth is immune from such vain sacrifices. Yet such 'universal entities' as honor, virtue, truth, etc., are to be regarded as the highest moral stimuli, next to religious principles. Is it not because of the rarity of the ideal rather than its universality that truthfulness and sincerity are so highly esteemed? And furthermore is it not for the reason that conflicts are apt to arise in matters which involve truthful dealing in practical life rather than in the acceptance

of mathematical verities that the one act excites our admiration, while the other is taken as a matter of fact? In other words, it is the very conflict and the very suppression which lend moral significance to the victorious impulse bringing about a particular act.

CHAPTER X.

BEHAVIORISM AND JURISPRUDENCE.

I.—THE LAW SYSTEM FAR FROM PERFECT YET CONTAINS THE CORE OF HUMAN CONVICTIONS—HENCE BEHAVIORISM MUST SATISFY JURISPRUDENCE—MENTAL CONCEPTS ALWAYS OF PARAMOUNT IMPORTANCE IN JURISPRUDENCE—ACT NOT CRIMINAL UNLESS ACCOMPANIED BY INTENT—EMPHASIS ON MENTALISTIC STATE MODERN PRODUCT—THE RÔLE OF MOTIVE, PLAN, KNOWLEDGE AND BELIEF IN THE DETERMINATION OF THE DEGREE OF GUILT—ILLUSTRATION FROM RECENT BOSTON TRIAL—WATSON'S SUBSTITUTE FOR THOUGHT UNTENABLE IN EYES OF LAW—MEYER'S CAPITULATION TO MENTALISM AS REGARDS INTENT—II.—ANOTHER LEGAL DIFFICULTY FOR BEHAVIORISM IS INTELLIGENCE FACTOR—LOW MENTALITY SHOULD NOT EXCUSE WRONG-DOING IF FREQUENCY AND RECENCY ALONE RESPONSIBLE FOR LEARNING—INSANE DELINQUENTS TO BE HELD ACCOUNTABLE ON THAT BASIS.

I.

It might strike some readers as amusing to find jurisprudence appealed to in rebuttal of the behavioristic claim; and though I should possibly incur the risk of being classed with Francesco Sizzi who argued against Galileo's discovery of the Satellites of Jupiter, which were supposed to be planets, on the ground that the names of the days of the week were complete as they stood, so that if we increased the number of planets, when no corresponding change could enter into our calendar scheme, "this whole and beautiful system falls to the ground"¹

¹ J. J. Fahie: *Galileo, His Life and Work* p. 103.

—notwithstanding such liability, I cannot but include the field of law in this survey of applications.

We are of course all keenly aware of the imperfections in our juristic system. The law ranks as one of the most conservative institutions known to man; and justice is woefully lacking in its administration. But if this institution has been behindhand with regard to the findings of science and progressive thought, it has always managed to preserve the core of human conviction in its slow but sure advance. What distinguishes jurisprudence from ethics is the fund of practical, though philistine-born, social sense in which it is rooted as contrasted with the refined but unverifiable theories and salutary but unenforceable maxims of the moralist. The law has established a *modus vivendi*; ethics attempts to go beyond that, and like the first waves at high tide prepares the way for new conceptions and new enactments in the legal waters. The objectivity, imposed though it is, which attaches to the law lends it a certain authority not generally conceded to ethics. The man in the street has little respect for a discipline which is not palpably binding, so that the general presumptions of jurisprudence, especially where such presumptions are common to all civilized nations, may be taken to mean the funded convictions of the common people on practical matters of conduct. This funded experience may not be correct, to be sure. It would then fall to the lot of reformers to revise the prin-

ciples of the law. In the absence of any move on their part in that direction, we should infer that these principles are essentially sound.

This preamble may sound as if I had set myself up as an apologist of the juristic system. In reality my object was to show why I think it warrantable to gauge a new device in the light of old standards. For once let us turn pragmatist and ask: will the device *work*?

Throughout the tomes of jurisprudence in most civilized countries significant reference is made to the mind. The antiquity of this advertence is a matter of no consequence, but the point that does prove important is the enduring emphasis which these mental states, rejected by our behavioristic builders, have been receiving in the fundamental conception of what constitutes an offence in the eyes of the law. A person under the criminal code is liable to punishment not because of his commission of a certain unlawful act, but because of his *intent* in conjunction with the act or his determination to perpetrate the act. No matter how heinous the crime is considered under ordinary circumstances, if it was done unintentionally, the liability is practically nil, except in the case of culpable negligence, which may be regarded as not wholly unintentional. If the act was done unknowingly such as in the state of noctambulism, no imputability attaches to the defendant (agent).

An act without an intention is generally regarded

as an event, an accident. What gives the act its specifically legal character is not the consequence, but its mental antecedent; and it is gratifying to note that the stress laid on the intent is more of a recent development in the progress of jurisprudence, thanks presumably to the safer methods of ascertaining the prisoner's state of mind at the time of commission, afforded by modern investigation, than, let us say, in the days of the Romans. "No doubt" we read in Markby's *Elements of Law*, "the view that the legal result of an act depends upon the attitude of the doer as regards the consequences has been much developed in later times. We always find in the earlier stages of law much more attributed to the act and much less to the attitude of the doer's mind."²

Markby does not go into the causes of this highly significant change in conception, but of one thing we may be certain and that is its non-fortuitous nature. To make up for this long and deplorable neglect, the analytic school of jurisprudence, with Austin at its head, seems to have plunged head over heels into the examination of the mental antecedents of an act, so that at present one senses a reaction in jurisprudence against the apotheosis of the will in discussions of Acts. But this reaction can at most affect only the other two so-called *essentials* of an Act, viz., exertion of the will and manifestation of the will. The state of consciousness, however,

² W. Markby: *Elements of Law* (4th edition) pp. 121-122.

accompanying an act, we feel, cannot be dispensed with as a prime condition of the act in question and therefore as a matter of great regard in the administration of justice. Negligence alone, Holland tells us, "has been used to indicate a state of mind, the description of which has taxed the ingenuity of many generations of commentators. It covers all those shades of inadvertence, resulting in injury to others, which range between deliberate intention (*dolus*) on the one hand, and total absence of responsible consciousness, on the other."³

On the surface there would appear a revolutionary tendency, disclosed in comparatively recent judgments, to lay more stress on the unlawfulness of the act and less on the actual intent of the offender. In the disposition of the frequently cited *Regina v. Prince* abduction case,⁴ the decisions of the several judges concerned with it brought out some highly suggestive questions. Their collective opinion seemed to demand the conviction of the prisoner even though he may not have known that the girl in question was younger than sixteen. Here at any rate it cannot be said with certainty that there was a concurrence of the intent and the act, and yet the prisoner is treated as if there were such a correspondence. I cannot help thinking, however, that the principle upon which the decision operated still

³ T. E. Holland: *The Elements of Jurisprudence* (5th edition) p. 96.

⁴ Cited in J. H. Beale's *Cases on Criminal Law* and also in E. W. Mikell's *Cases on Criminal Law*.

centred about a state of mind or its absence. The principle invoked provides that anyone engaging in an unlawful act should consider the possible consequences of his act and should make sure that the facts he assumes, inasmuch as they are verifiable, are true. In default of such endeavors, the offender makes himself liable on the ground of heedlessness, the degree of culpability of which is determined by the extent of harm done. And heedlessness is, as Austin has long ago defined it, a definite state of mind, as are negligence and inadvertence. Again, it is only fit that the extent of heedlessness or negligence should be measured by the possible consequences, for instance a bridge tender or switchman must exercise greater caution and impose upon himself a heavier responsibility than an ordinary carpenter or mason.

We thus must revert to the famous dictum "*actus non facit reum nisi mens rea*" in spite of the dissenting voices of to-day. The disagreement rests for the most part on an insufficient analysis and on a rationalization that stops short of psychological or logical procedure. Even ignorance of the law should have been taken into consideration when deciding on the guilt of an offender, were it not for the fact, as Austin remarks, that there would be no end to the complications arising in the administration of justice which is already overburdened with difficulties.

The *mens rea* must of course not be interpreted in the narrow sense of guilty intent or guilty knowl-

edge alone. It must include the many states of mind which are held blameworthy because of the possible consequences. In keeping with the foregoing, Justice Holmes has made it clear that "recklessness in a moral sense means a certain state of consciousness with reference to the consequences of one's acts".⁵

We should hardly suppose that jurists and court officials have for centuries been giving themselves great pains to determine the various grades of a phase of consciousness unless the exigency of the case required it. The passages in legal treatises in which the terms "mind" and "consciousness" figure conspicuously are too numerous to refer to even in a large-sized volume. Whether it is the phrase "meeting of the minds", so much in vogue in the law of contracts, we are dealing with, or whether it is the well-known rule in evidence that no dying declaration made in the absence of the prisoner could be admitted except it be proven that the declaration was made with full consciousness and expectation of approaching death,— it must dawn upon every one of us that our whole conception of right and wrong and the determination of the extent of a person's guilt are inseparably bound up with a mentalistic psychology. And it would be the height of folly to assume that criminal imputability attaches to the presence or absence of certain secre-

⁵ Justice Holmes in *Supreme Court of Mass. Commonwealth v. Pierce*.

tions, in other words that A's culpability in selling liquor did not depend on his knowledge of what was in the jar, but on some behavioristic substitute of this mental condition commonly thought of as knowledge.

Other mental conditions that enter into the analysis and disposition of a legal case are: motive, plan and design, although these are important in an evidentiary way only, whereas belief and knowledge play a double part, sometimes forming a probative link in a circumstantial chain, while at other times, as in the instance given below, constituting a determinant of the prisoner's accountability.

In a recent Boston trial at which one man was charged with stealing certain documents from an attorney's office and two others with receiving the goods, Judge Fessenden made it clear to the jury that "if there was not the purpose to deprive the owner of them permanently at the time of receiving, they (i.e. the receivers) cannot be convicted," and as to the alleged thief, the following statement will probably be somewhat of a surprise to the layman: "*It cannot be larceny unless the person who takes them (i.e. the documents) intends to deprive the owners of them permanently.*" Here we have a state of mind qualified by another state of mind in which a temporal element is involved, and one can readily see that it is not the act of taking some one else's property without his knowledge which is reprehensible in the eyes of the law so much as the

intention to deprive the owner of it permanently that gives the act its criminal character.

The enlightening discussion in Wigmore's *Principles of Judicial Proof*⁶ on the subject of evidence to prove a human trait, quality or condition, where the salient feature of criminal intent is said to be a "volition exercised with conscious reference to *whatever knowledge the actor has* on the subject of the act," should at once bring home to us the untenability of the behavioristic position.

To argue that intent is discoverable only through behavior, and is therefore not so vital as represented to be, is a flagrant *ignoratio elenchi*, for the *issue before us is not the means of discovery but the object to be discovered*; and the very fact that the one is an indicator of the other amply proves which is the more significant of the two. Since then Intention is a *sine qua non* of at any rate the most serious phase of the law, behaviorists are under obligation to produce their equivalent of so fundamental a concept in our social life or else prove to our satisfaction that a criminal act is culpable whether it is intended or not.

The subterfuge that will possibly be resorted to by our innovators following the lead of Watson, viz., that the intention is nothing but a set of laryngeal movements, merely the particular expression of an implicit language habit, will hardly bear examina-

J. H. Wigmore: *Principles of Judicial Proof*. pp. 131-132. The section treating of the various mental states incidental to criminal acts covers pp. 94-146.

tion; for jurists insist that a *declaration of intention is not necessarily indicative of the existence of an intention in the mind.*⁷ If intention then consists of language habits, is there any reason why the implicit type of such vocal reactions should be more incriminating than the explicit movements? Similarly if intention is made out to be a bodily attitude of some kind or another, what, we may ask, is it that imposes upon a mere attitude such a heavy burden that a forbidden act committed without this attitude is punishable either not at all or only mildly, while if the act is co-existent with the specific attitude, it incurs a penalty, in many cases, of a severe type? We blame a person for his *state of mind* in conjunction with the perpetration of a crime, because it is in that respect that he differs from an animal, viz., in *understanding the consequences of his action*, but surely the act itself does not become fraught with greater gravity because of another act or set or internal movements (bodily attitude) which may take place in the lower animal kingdom as well.

Above all, it seems to be a pernicious practice, which unfortunately has been on the increase in the behaviorist camp, to "assume frankly" certain speculative physiological facts, and on the strength of these assumptions to build scientific castles-in-the-air. To be hopeful of results is commendable, and

⁷ A. M. Burrill: *A Treatise on Circumstantial Evidence* (1868) p. 545 quoted in Wigmore's *Principles of Judicial Proof* p. 121.

to start with certain hypotheses in the expectation of later verifying them is a condition of all scientific investigation, but the hypothesis must in every case take on some definite form. The tendency displayed by many behaviorists has been to convert mental states into behavior by surmising a "physiological process of which we have not as yet sufficient knowledge." Like the alchemists of old, they are possessed of the notion that the *Physiologist's Stone* will work the trick; but loathing philosophy and despising psychology because its history and problems happen to overlap those of philosophy, they have, ironically enough, themselves become immersed in a veritable ocean of speculation, true enough, physiological speculation, but no less fantastic than the metaphysical texture of former days.

Not all behaviorists, of course, are equally sanguine; and in fairness to them it must be said that they are not all prone to shut their eyes to pesky problems. Even the perplexity I have pointed out in this chapter has not wholly been overlooked in their writings. Max Meyer has partly anticipated it, but has been constrained to capitulate to the mentalists, not however without promising himself a victory at some later date. His illustration bringing out the difficulty of his position is so apt, and his solution, on mentalistic ground, is so instructive that I am tempted to quote two passages from his earlier text book.

In the first chapter we read "A boy has placed a

plank across the street car track and derailed the car. He tells us that he thought that the foundations of the bridge a little distance away had been washed out and that he intended to stop the car and save our lives. Whatever may be the facts in the case, that is the doing and the being of the water, the bridge, the car, and the boy himself,—we probably praise him for his thoughts and intentions. Or the boy tells us that he wished thus to injure and punish another boy whom he saw as a passenger on the approaching car. Whatever may again have actually happened, visibly and audibly,—for the boy's thoughts we have only contempt. Yet the boy's being and doing is the same in both cases: he looks the same and he has placed the same plank in the same manner across the track." ⁸

Now let us see how he proceeds to explain the difference on other grounds than the "mysterious unknown, his thoughts." We turn to the concluding chapter in the book from which the following is extracted:

"The proper valuation of the boy's action depends on the application of the proper generalization. It really does not matter much whether the boy placed a plank on the track by using his hands, or caused a rock to roll on the track by using his feet, or, by using his speech organs to pretend a different purpose, made a friend put a stick of dynamite there. What matters is only the fact that all these events are

likely to cause the derailment of a car. The derailment, again, is not of so much importance for our judgment as the fact that the derailment may be the cause of many different events, the saving of a train from passing on a bridge with underwashed foundations, the halting and maiming of numerous passengers by the destruction of the car, and innumerable others. Our judgment, then, is impossible without generalization. It is itself a generalization of a high order. It expresses our decision as *to what generalizing* function determined the boy's motor activity, whether he said to himself: 'I will save' or 'I will kill.'

"As we found in the preceding lecture, however, it is not necessary that the boy actually pronounce the word. It leads to the same motor result if the particular generalizing function on which our judgment has decided, is purely nervous, a nervous process passing through a certain higher center in the boy's brain. Therefore, if our judgment were in every respect what it ought to be according to the standards of exact science, it would plainly express that this generalizing process occurred in this high center of the boy's nervous system. But unfortunately, these nervous processes in the higher centers are only hypothetical, owing to the fact that the instruments for their observation have not yet been invented. That they will have been invented in a hundred years, or sooner, or later, does not help us. So we help ourselves by substituting in our imagina-

tion for the boy's nervous process which to-day the undeveloped state of physiology will not let us know, an assumed reality which we do not, shall not, cannot ever know, a *mental state* of the boy, his willing to save or kill. The right to substitute this assumed mental state, in spite of its being forever unknowable, for the nervous process which is insufficiently known only because of the insufficient development of scientific technic, we derive from the fact that a (slightly familiar) nervous process like the boy's is in each of us, individually, regularly co-existent with a perfectly familiar state of willing to save or kill."

This conclusion which indicates the weak point of a thoroughgoing behaviorism is rational enough, although we may entertain misgivings about the familiarity of the nervous processes which the author takes to be co-existent with the intention. My own experience does not reveal the slightest degree of familiarity with any such process; and the substitution, therefore, of a fact which is well-known to everyone of us for a hypothetical process, which specifically is unknown, requires no apology or explanation. What Meyer has accepted *faute de mieux* with a sense of resignation is after all the only course that the circumstances would allow us to take to-day, to-morrow or a thousand years hence. For it is idle to persuade ourselves that at some future date, when the proper technique is devised, we shall be able to view such states as intention, belief, knowl-

edge, motive and the like as neuro-muscular or glandular events.

Suppose we accepted behaviorism in its extreme form—and any other kind is neither consistent with itself nor is it incompatible with orthodox psychology—it would behoove us, as Watson has done, to eliminate all mental states from our scientific discussions. Since *intention* is a mental state, we should be obliged to give up this term too until the great day comes when the physiological mechanism is discovered that the intention will be translated into. Meanwhile, what are the jurists and the court personnel to do? Wait for the transformation and not bother about such “assumed realities”, or lay themselves open to the charge that they are dealing with entities which psychology (behaviorism of course) does not recognize?

If there is a way out of this dilemma, we should be gratified to be apprized of it. To allow the law to take cognizance of certain mental states and yet to divest these of psychological analysis, and therefore significance, would mean the most colossal miscarriage of justice ever conceived; for thousands upon thousands of life and death cases are being decided upon an “assumed reality”—hence a presumption which possesses no scientific content.

Nay more, even if we should succeed in putting our finger on the nervous process which corresponds, in common parlance, to the intention, should we ever

be able to exploit our discovery so as to actually apply it to life situations, seeing that the intention invariably precedes the act? But even assuming that the two are simultaneous, then since very few people are caught *in flagrante delicto*, the process of examination, were such an examination possible, would occur so long after the behavioristic equivalent of the intention took place, that our efforts would, for practical purposes, yield us the same results as if we tried to catch the wind in a net.

That our intentions are correlated with certain physiological processes, practically all introspective psychologists will concede, but what we should impugn is the thesis *that these physiological processes are more important for psychological analysis and the understanding and adjudgment of ethical, as well as legal, phenomena than the mental state we denominate intention*. In physiological psychology, on the other hand, one must admit that the discovery of the brain event at the root of intention would be a blessing. But in general, if we should be forced to part with either of these correlates, there can scarcely be any question as to which we can afford to lose.

II

Another thorn in the flesh of behaviorism is the intelligence factor of an individual as the basis of responsibility. A person with a low grade of mentality is frequently regarded as unaccountable in the

eyes of the law and therefore cannot be taken to task for an offence. A behaviorist might say that such an individual suffers from poor integration, but why should this circumstance cause any more extenuation than poor motor co-ordination or low vitality? In ordinary language we say that such an offender *does not understand the nature of his act*, though he may be perfectly able to control it. According to the behaviorist, the imbecile culprit possibly did not assume the normal bodily set towards the act. Allowing for this conjecture its full par value, we are still at a loss to understand why one man should be punished for only manifesting a different bodily set from that of his fortunately unfortunate brother.

It may be retorted that punishment will deter or reform, as the case may be, only the person of normal intelligence, but such a stand would not be justified by the views held in behavioristic circles regarding the learning process. If frequency and recency are the only two factors at work in "stamping-in" or "out" an act, we should expect even the idiot and the madman, as well as the chronic delinquent, eventually to benefit by the confinement or other penalty imposed. A man, let us say, is an incurable dipsomaniac, why not pass out a jail sentence to him every time he is found guilty, in the anticipation that his nervous system will gradually become so adjusted that he could never be tempted to take another drop of liquor? He has violated the law,

and the law should be no respecter of lunatics or idiots. That there has been no inclination to invest the lower types of mentality with responsibility bespeaks the fact that behaviorists are rather chary about applying their mechanistic principle to matters of law.

CHAPTER XI.

BEHAVIORISM IN THE LIGHT OF MEDICINE.

I PSYCHIATRISTS AND PHYSICIANS PROCEED ON BASIS OF TRADITIONAL PSYCHOLOGY—TERMINOLOGY NOT BEHAVIORISTIC—WATSON'S ATTEMPT TO "BEHAVIORIZE" PSYCHIATRY—DERANGED MIND A HABIT—TWIST—THE NEURASTHENIC DOG—WATSON'S NOTION OF A HABIT—MALINGERING MAY PRODUCE HABITUAL RESPONSE YET MALINGERER NOT A PATIENT—FACTS OF MULTIPLE PERSONALITY FATAL TO "HABIT-TWIST" THEORY—CAPACITY TO CONTROL REALLY DECIDING FACTOR IN MENTAL HEALTH—BEHAVIORISTIC EQUIVALENTS OF THE MANY MENTALISTIC TERMS IN PSYCHIATRY A PIOUS WISH—JELLIFFE'S REJOINER TO WATSON—AFFECTIVE FUNCTIONING DIFFERENT FROM MOTOR HABITS—II ORDINARY MEDICINE AND PSYCHOLOGY—PATIENT'S INTROSPECTION AND RELIABILITY OF DIAGNOSIS—POSSIBILITY OF DIAGNOSIS ON STRENGTH OF PATIENT'S INFORMATION INDICATES UNIFORMITY IN MENTAL EXPERIENCE.

I

Like the jurist, the physician, since the days of Hippocrates, has been working on the basis that there is such a thing as consciousness or mind; and with the rapid strides of medicine in recent times, the importance of mental functions has become increasingly evident to the members of the profession. Numerous articles and chapters in books have pointed out the necessity of understanding the facts of attention, memory, etc., for a proper diagnosis of the patient's ailment.

In the domain of mental disease, psychiatrists and

alienists were constantly entering into a "give and take" relation with the psychologist who was thought to be dealing with the same general phenomena, though with a different purpose in view. As Mercier expressed the relation more than a quarter of a century ago, ". . . in order to know anything about insanity it is necessary first to know something about sanity, and in order to know anything about the disordered mind it is necessary to know something about the mind in health." ¹

To this very day, psychiatrists and psychopathologists are going about their therapeutic duties in the implicit belief that they are treating disorders of the mind, that their patients are actually afflicted with obsessions, manias, phobias, delusions and *idées fixes*, or are suffering from this or that psychosis. Cures have been effected long before the first discussions on behaviorism had seen the light of day. Would it not be natural to conclude then that the principles upon which these medical men were operating contained an element of soundness in them, or shall we urge à la Watson that if mental pathology had been able to achieve wonders, it was in spite of itself, rather than as a result of its own enlightened initiative? Perhaps we ought to regard the psychiatrist of to-day with the same contempt as Molière treated the medical practitioners of his day. At any rate one cannot help sighting a tinge of dubious patronage in Watson's attempt to 'behavior-

¹ C. Mercier: *Sanity and Insanity*, preface XVII.

ize' psychiatry. The method is very simple. There is a stereotyped formula or rather word which explains everything. This word is *habit*. Like the miracle in a by-gone theology it solves all difficulties. The deranged mind is nothing but a habit twist,² and once we bear in mind that thoughts are nothing but language habits, the rest is straight sailing. Let us understand then that the man who believes himself to be Nero, the woman who is repeatedly washing her hands, the old maid who is obsessed by the notion that her pastor is courting her—that these characters are not suffering from some mental disorder but are merely given to wrong habit complexes. And to refute the generally accepted view of mental disease, Watson ushers into our presence a hypothetical neurasthenic dog which behaves most peculiarly, doing everything the reverse of what we should expect it to do. The uninitiated spectators, argues Watson, take the dog to be insane, but as a matter of fact it had been carefully trained to act in that manner, and it is not the mind but the habits that have changed.³

But why resort to the canine world for a refutation of the functional view of certain diseases? May we not cite the case of a man who, though perfectly sane, acts as if he were insane? Are there not numerous

² J. B. Watson: *Psychology from the Standpoint of a Behaviorist* pp. 418-420 and 'Behavior and the Concept of Mental Disease.' *Jour. Philos. Psychol. and Sci. Methods* 1916, vol. XIII p. 592

³ J. B. Watson: 'Behavior and the Concept of Mental Disease' *loc. cit.* pp. 593-594

cases on record of just this very sort of simulation carried on, in order to escape from prison or captivity—a “method of madness”, which goes under the name of malingering? These activities can hardly be called habit distortions; for in order to become a habit, an act must have been repeated many times and prove automatic. When a man, however, goes through all sorts of antics which his sudden inspiration has called forth in the presence of great danger to his life, we are doing violence to the definition of habit, if we apply such a term to that type of conduct. Moreover, on Watson's criterion, the trained dog *should* be considered deranged, for what matters it in what way the habit distortion has come about? The fact remains that the habits of the dog are now unlike those of the normal dog; accordingly treat it like any other mad dog.

On similar grounds, the man who asserts daily that he is the king of China must be declared to cherish an obsession regardless of whether he actually believes his statement or not. The distorted habit is undeniably there, and since we must not inquire as to his ideas or consciousness, the only test we have to go by stigmatizes him at once as one possessed of a diseased personality. *Again* I must make it clear that to refer to the importance of behavior as a criterion of one's sanity is altogether beside the point. Most assuredly it is an invaluable guide towards a diagnosis, *but a guide only, not an*

objective. We are not primarily concerned with the endeavor to ascertain whether the patient's behavior is queer, but whether his mind is disordered, *whether he is really a patient*, in the etymological sense of the word.

From what we know about multiple personality and other dissociations, it would be easy to argue against the 'habit twist' theory of mental disease. The sudden emergence of the Sally personality in the Beauchamp drama⁴ leaves no room for the formation of habits represented in Sally's conduct. It is all very well for Watson to set forth that the "habit distortions may and do often start in infancy",⁵ but unless we assume that prior to the appearance of the Sally personality, there were gaps in Miss Beauchamp's consciousness and motor activity, the learning of certain tricks, at which Sally was a master, could not very well have gone on.

The conception of mental disorder as a wrong habit complex will, on close analysis, be found to contain a *petitio principii*. What is our criterion of right and wrong in habit formation? Why call one series of reflexes distorted and another regular? If for the reason that the individual in the one case is unable to exploit his reflexes advantageously, it would not be difficult to cite cases of abnormal habits which might prove serviceable to their exerciser by

⁴ M. Prince: *The Dissociation of a Personality*.

⁵ J. B. Watson: *Psychology from the Standpoint of a Behaviorist*, p. 419.

bringing him in an income at certain places of public amusement, yet the man would none the less be regarded as psychopathic. The line of cleavage that must be drawn between the sound and the disordered mind is to be sought rather in another direction—in the faculty of *control* which is decidedly a *conscious* function and not in the difference between a right and a wrong habit which cannot be determined except *ex post facto*. In a certain respect, all geniuses may be said to have acquired distorted habit complexes.

In order to revolutionize psychiatry and introduce a new conception of mental pathology, it would be necessary to give detailed treatment to a number of cases on record, and to offer behavioristic equivalents to the many serviceable terms current in psychiatry and psychopathology that are rooted in traditional psychology. To employ a blanket term like habit to phenomena widely varying in character is hardly in accordance with scientific procedure.

The conclusion of Watson's article on the concept of mental disease is typical of the impatient and sanguine temperament which characterizes the whole school. "To apply this in detail in functional cases," he pleads, "overtaxes my ability as well as my present interests. At any rate the suggestion seems to me to give a reasonable clue as to the way in which such shifts in the emotional constituents of a total integration can occur. Surely it is better to use even this crude formulation than to describe the

phenomenon as is done in the current psychoanalytic treatises."

Could we have expected that such a feeble plea would persuade psychiatrists to revise their terminology as well as their methods? Need we be surprised to learn from an eminent psychiatrist that "the paper in question was an extremely naïve and simplistic presentation of the problem of mental disease?" It is a pity that Jelliffe in his reply to Watson wields Freudian weapons instead of disarming his opponent by reducing his objections and charges *ad absurdum*. Much of what Jelliffe has to say on this score will appear irrelevant to the particular issue between behaviorism and mentalism—indeed it seems as if he has come not to answer Watson but to praise Freud—but his criticism of the behavioristic attitude is both virile and eloquent enough to afford the psychologist a glimpse into the situation from a new angle.

The following detached quotations from Jelliffe's article will no doubt be helpful to the reader who is not disposed to survey it *in toto*:

"Behaviorism scanning but one plane must necessarily be blind to the necessity and utility of such a concept which reaches profoundly into certain very real factors, which seem to extend beyond the purely mechanistic automatic and reflex means of response. It cannot conceive just wherein lies the apparent complaisance of the physicians in the acceptance of

* J. B. Watson: *loc. cit.* p. 596.

this concept to which the urgency of human actualities compels them. They find in referring the pathological phenomena under consideration to the 'purely mental' that they are provided with a concept of dynamic power, a workable tool which penetrates causes and beginnings and provides a means of reëducation and redistribution of effect involving adequate discharge, before which the colorlessness and ineffectualness of an ideal behavioristic reëducation plainly reveal themselves."⁷

"There can be no doubt that psychoneuroses have brought about 'habit twists' which have become a faulty equipment in the patient's reactions to life. To acknowledge this is by no means to lose sight of the relation of the habit twists as only forms of expression of a self that is more than a complex and coördinated system of language and bodily habits. . . . The very fact that the patient can not phrase in terms of words the habit twists which have become a part of his biological equipment would imply that there is something more than merely bodily habit twists."— . . . "Speech is no more capable than any other mechanism of taking the place of affective functioning, but is one of the vehicles through which this is given discharge, an implement which the same affective impulses first formed and are still perfecting for their use."— . . .

"Neither is it enough to attempt to locate a some-

⁷ S. E. Jelliffe: 'Dr. Watson and the Concept of Mental Disease' *Jour. Philos. Psychol. and Sci. Method* 1917 vol. XIV. pp. 269-270

thing 'corresponding in part at least to the *affective values* of the psychologists and pathologists,' something with which the author supplements the *motor habits* which have so far occupied his discussion in the response of the glandular system. The effect of emotion there is plain to be seen and growing more definite to the understanding with the aid of experimental physiology, but to confine effect there is another matter altogether."

II.

Turning now to ordinary medicine with which the general practitioner is concerned especially in diagnosis, it may be well to examine what advantages the behavioristic method offers above the introspective. To be sure the physician in many cases possesses the means, thanks to the marvelous technique which modern medicine has developed, of diagnosing an organic case without resorting to questioning the patient. But there are innumerable instances in which the intelligent coöperation of the patient renders the diagnosis, to say the least, more reliable. It is commonly known that *ceteris paribus* it is more difficult to tell what is ailing an infant than a child that has learnt to speak. The adult similarly is in a better position to describe his symptoms than the young child, for though both can talk and thus manifest a certain type of behavior, the grown-up person's language more nearly corresponds to his mental experiences than does the child's. Careful

introspection on the part of the patient is assuredly conducive to the proper kind of treatment. The qualification of a pain as shooting, drawing, boring, tearing, gnawing, sharp or dull is a welcome bit of information for the attending physician, which could not be elicited through any behavioristic device. The fact too that a certain kind of pain is recognized as symptomatic of a definite malady or at least is associated with one type of ailment and not with another incidentally suggests that psychology in the traditional sense is not such an individualistic discipline after all, and that there is sufficient uniformity in our various experiences to warrant the basing of important conclusions on the strength of their occurrence.

The insistence of pure objectivity in medical diagnosis i.e., on external observation without the aid of the patient's account of his symptoms is reminiscent of the story a well-known minstrel used to tell about one of his people who on taking ill refused to have a "man-doctor" called. He wanted instead a "hoss-doctor" who would not bother him with all sorts of questions which he would be expected to answer. This Afro-American patient must have been a thoroughgoing behaviorist.

CHAPTER XII.

BEHAVIORISTIC INTERPRETATIONS OF RELIGION.

INCONGRUITY OF RELIGION AND BEHAVIORISM—PROBLEM TO REDUCE RELIGIOUS CONSCIOUSNESS AND FAITH TO STIMULUS AND RESPONSE MECHANISMS—LEUBA'S POSITION NOT MECHANISTIC—FIRST FEEBLE ATTEMPTS TO TREAT VALUES IN BEHAVIORISTIC TERMS—NATURALISM IN RELIGION NOT NECESSARILY ITS REDUCTION TO NEUROMUSCULAR AND GLANDULAR PROCESSES—AMBIGUOUS TERMS—DUBIOUS EQUATIONS—"AS IF" RELATIONS WHICH HAVE NO SIGNIFICANCE—IS BELIEF MERELY A POSITIVE REACTION?—SPECIFIC DIFFERENTIALS OF REACTION IGNORED—FALLACY OF *identifying coordinates*—FALLACY OF *mistaken essentials*—BELIEF AS A *readiness* TO RESPOND—READINESS NEITHER PSYCHOLOGICAL NOR PHYSIOLOGICAL TERM—RELIGIOUS CONSCIOUSNESS ANALYZABLE BUT NOT REDUCIBLE TO NON-MENTAL COMPONENTS.

The incongruity between religion and behaviorism would seem at first blush so patent a fact that their conjoined treatment might possibly provoke an impatient shrug in some quarters. Religion, as we understand it here, is to be taken in the sense of religious belief and not as religious practice. The issue before us just now is not whether there is any validity to this or to that specific belief or even whether the growth of religious belief can be explained in terms of biological value, but whether that which psychologists have been wont to regard as religious consciousness can be reduced to stimulus and response, to reflexes, original or conditioned, to

habits, explicit or implicit, or some other element of that brand.

The question has thus far not been seriously approached probably for the reason that behaviorists as a class are not interested in the subject of religion, while investigators in the field of religion are even much less concerned with behaviorism. Leuba's important work on the psychology of religion¹ is sometimes regarded as behavioristic in spirit. This interpretation is probably suggested by the heading of the first chapter which reads "Religion as a Type of Rational Behavior." The most cursory survey of the book will reveal the erroneousess of such a view. Toward the end of the preface, the author expressly states, "I had perhaps better add that I am not a materialist. . . . Perhaps the term 'empirical' idealist best fits my philosophical position." Throughout the book, Leuba employs the conventional terminology of the text books and apparently makes no effort to transmute his "mental requirements" and "religious consciousness" into patterns and adjustments.

What is likely the first step in this direction was taken within the last three or four years by several Harvard candidates for the doctorate, of whom S. C. Pepper presented for his thesis *A Theory of Value in Terms of Stimulus and Response*, W. R. Wells undertook *A Behavioristic Study of Religious Values* and W. S. Taylor offered to explain belief in behavioristic terms.

¹ J. H. Leuba: *A Psychological Study of Religion*.

At the time of my writing only Wells's dissertation had been published, and its original caption was now changed to the more appropriate title *The Biological Foundations of Belief*. That Wells had started out laboring under the impression that the world was turning behavioristic may be gathered from the following curious remark in the preface to his little book: "The recent development of psychology into behaviorism suggests the importance of a behavioristic study of religion." Is it not a bit premature on the part of even the most ardent behaviorist to suppose that psychology has already become superannuated and the behavioristic régime a *fait accompli*? That aside however, we must turn to the book proper for the promised account of religion, ever bearing in mind that our quest is not to discover whether religion may or may not be envisaged in a naturalistic setting, or something else of the sort, but the analysis of religious belief and the religious attitude into neuro-muscular and glandular processes.

It is not till we reach p. 44 that we detect a trace of behaviorism in the discussion. Naturally value is to be defined "in terms of organic attitudes and acts, in terms of liking and desiring," and again a very dubious proposition is given great weight when we are informed that "liking and desiring may be most adequately treated in behavioristic terms." The further complaisant premise "since interests and likes and dislikes have meaning only in terms of

behavior" yields the smooth-flowing conclusion that value may ultimately be defined in terms of reactions or responses, positive or negative." Yet Bertrand Russell, in spite of the royal road *via* desire, is very much at sea as to this term desire which, he claims, Watson has not made the slightest endeavor to explain objectively.²

A further illustration of the illusory character of the behaviorist's simplification is to be had in the observation that "To have an interest in an object means to act in such a way as to try to get possession of it (or retain it if already possessed)."

Truly the first part of the equation is as ambiguous as the latter half is indeterminate and unanalyzed, let alone the question whether we are dealing with a real equation. Without intending to introduce pleasantries into the argument, may we not contrive to set up "*in such a way*" relations after this fashion: to experience pain means to behave in such a way as to try to get rid of the noxious stimulus; to love a woman is to act in such a way as to try to marry her, and so on *ad libitum*?

The naïveté with which some of the knottiest problems are solved without analysis or reference to previous attempts in the history of philosophy and psychology is astounding. But as has already been intimated, behaviorists as a class are too impatient with the painstaking endeavors of their precursors.

² B. Russell: 'How Propositions Mean.' *Problems of Science and Philosophy*. *Proc. Arist. Soc. Supplem.* vol. II p. 16.

Rather than examine critically the analysis of belief in the writings of Spinoza, Hume, the Mills, Bain, Brentano and the Würzburg school in order to discover how complex a phenomenon belief is, they prefer to dispose of the matter with an "Oh-that's-easy" air. For behaviorism "belief is a positive reaction to a proposition, and disbelief is a negative reaction. Belief in God, for example, is an acceptance of, or a positive organic attitude toward the proposition God exists. Disbelief is a rejection of, or a negative attitude toward the proposition. Beliefs are psychological, i. e., behavioristic, entities and propositions are not." ³

What a series of *ex cathedra* statements! What a beautiful illustration of defining *ignotum per ignotius*! What is meant by a "positive reaction" or even a "positive organic attitude", and what is such an attitude toward a proposition? Does it mean that there is an incipient leaning forward whenever we think, read, or hear the words "God exists"? Does it further mean that the disbeliever shrinks at such a proposition? Why is it not specifically told what organic processes a positive attitude comprises? And if our suggested mark of the negative attitude is correct, must we not ask for experimental evidence on that head before we can lay down the law? Arm-chair psychology is science indeed when compared with the dogmatism of our radicals.

³ W. R. Wells: *The Biological Foundations of Belief* p. 53.

Our volley of questions is not yet exhausted. What makes the particular attitude positive or negative? With a tangible stimulus like a color or a sound there is no mystery, since of course *positive* then would mean *in the direction* of the stimulus and negative would denote *away from it*, but an *existential* proposition like God exists, or in fact any other proposition, is not localisable and therefore leaning forward or any other response would not bear either a positive or a negative relation to the stimulus. Mathematical propositions like $2 \times 2 = 4$ will even accentuate this lack of direction.

What furthermore will the poet's organic attitude be toward the figments of his imagination? He certainly does not believe in the reality of ogres and gorgons, fauns and nymphs, yet one would be taking a risky step to declare that the poet is reacting negatively every time he describes his characters and their activities. And still another matter must be presented for our enlightenment. On p. 53 it is expressed, and on p. 73 repeated, that a *proposition is not psychological* subject-matter. Now behaviorism professedly seeks to explain all psychological facts in terms of stimulus and response. If then, belief is a reaction toward a proposition, we must conclude either that there are stimuli which are beyond the scope of psychology (or behaviorism), or else that it is not always a stimulus which occasions a response. This dilemma, it seems, is fatal to the author's view, and its force can be weakened only

on the assumption that we are responding, in belief, to the contractions of the laryngeal muscles, which Watson represents to be the behavioristic substitute of thought; but Wells apparently does not follow Watson in this respect for he speaks of meaning in terms of universals.⁴

Behaviorism has discovered at last that belief is nothing but acceptance, and disbelief—rejection, though fully a generation ago Brentano used the same categories for judgment⁵ and Messer, we find, has supplied us the experimental data in support of such a view.⁶ To make the *rapprochement* between the now remote *Akt* psychology of the Teutons with the behaviorism of the Americans still easier, one need only accept Wells's practical identification between belief and judgment. To be sure, neither Brentano nor Messer reduces acceptance and rejection to organic attitudes, but then our knowledge is not advanced in the least upon this nondescript piece of information.

The easy-going method of handling a phenomenon like belief is exemplary of behaviorism as a whole. The specific fallacy of the school is that of *identifying co-ordinates*. If fact A is almost invariably perceived to accompany fact B, behaviorists will be apt

⁴ R. W. Wells: *loc. cit.* p. 73.

⁵ F. Brentano: *The Origin of the Knowledge of Right and Wrong*. p. 138 ff.

⁶ E. B. Titchener: *Experimental Psychology of the Higher Thought Processes* p. 138 ff.

to set up a relation of identity between A and B. But the perversity of this method tends to assume wider proportions. In identifying the co-ordinates, the independent fact is merged into the concomitant, thus disclosing another fallacy which may be called the *fallacy of mistaken essentials*. In this way the *fundamentum divisionis* is most frequently lost sight of by behaviorists; for whenever there is the slightest possibility to analyze a mental state into a number of elements, they will be certain to seek out some one special element, which is most likely to accord with their stock-in-trade, and solemnly declare that the mental state *is* the element.

My own experiments on belief conducted several years ago at the Harvard Psychological Laboratory⁷ have convinced me that a great deal of what is usually thought on this subject will not bear examination. I have learnt among other things that judgments in the majority of cases were induced by imagery and emotional complexes rather than by actual ratiocination—in a word, that the absurd is just as likely to be believed as the rational argument, provided the subject changed the approach to his task. I shall further grant that the belief-disbelief attitudes involved a play of imagery, changes in respiration, inhibitions and facilitations, strains and tensions, organic complexes such as tingling in the chest, kinaesthesia in the back of the neck, etc., but

⁷ A. A. Roback: 'The Psychology of Belief,' *Psychol. Bulletin* 1920, vol. XVII pp. 53-54.

it is a far cry from these results to the conclusion that all belief is nothing but organic attitude.

In W. S. Taylor's doctoral thesis "Belief and Behavior," the fact of belief, in spite of the behavioristic impetus behind this research, is divided up into a mental side and a physiological side, the physiological (neural) correlate being an "explicitly or implicitly expressed readiness to respond." Needless to say, such a bit of speculative physiology is altogether too tentative for discussion. It is even doubtful whether one has a right to speak of "readiness" as if it were either a physiological or a neurological term. But this consideration apart, it would be easy to adduce numerous instances showing that not all propositions believed in produce this readiness, and conversely that not every case of such readiness is paralleled by a state of belief.

Belief, and religious belief in particular, is too complicated a mental situation to be simplified into behavior; and the religious consciousness will not leave our midst as a separate phenomenon, regardless of what formulae are applied to it. I do not mean to infer that either belief or the religious consciousness is an unanalyzable element, but rather that it will not reduce to a non-mental denominator. We may continue speaking, as Leuba does, of religious behavior in the sense of external manifestations of our religious consciousness. This usage, however, by no means implies that what constitutes religion is religious behavior.

CHAPTER XIII.

INTELLIGENCE AND BEHAVIOR.

CONCEPTION OF INTELLIGENCE—BINET'S CONTRIBUTION—RESULTS OF RECENT SYMPOSIUM ON NATURE OF INTELLIGENCE—ONLY TWO PARTICIPANTS BEHAVIORISTICALLY INCLINED—TERMS LIKE "CAPACITY", "POWER", ETC., FOOTLESS—CRITERION OF RESPONSE EMPTY—MORE INTELLIGENCE IN CREATION OF STIMULUS THAN IN RESPONDING TO SOME STIMULI—*petitio principii* INVOLVED IN ADJUSTMENT VIEW—WIEMAN GUILTY OF IDENTIFYING COÖRDINATES—BEHAVIORISTIC DOCTRINE OF INTELLIGENCE EITHER CIRCULAR OR TAUTOLOGICAL—NOT ADAPTATION BUT BASIS OF ADAPTATION IMPORTANT—MENTALITY SOMETIMES DISTINGUISHED BY LACK OF ADAPTATION—PERRY'S WARNING AGAINST DISMISSING NON-PHYSICAL ENTITIES—MORE CIRCUMSPECT BEHAVIORISTS LESS MATERIALISTIC—INADEQUACY OF SUBSTITUTES FOR MENTALISTIC TERMINOLOGY.

The conception of intelligence took a behavioristic turn with the functional notion introduced by Binet. The definition of intelligence as adaptability to new situations which is a vestige of Spencer's synthetic philosophy at once became popular among psychologists and is still, I believe, the accepted view. Up to the time of Binet, intelligence used to be understood in the sense of comprehension, that is in the etymological sense. Intellect, again, was a term employed to designate a higher kind, perhaps a more abstract type, of intelligence.

From the inundation of intelligence tests and the

importance attached to the testing of school children one should have judged that it is the easiest thing in the world to describe the nature of intelligence. Yet the Thorndike-Spearman disagreement as to the modality of intelligence has exposed certain perplexing features surrounding the general question: "What is intelligence?" At variance with one another are also the definitions of intelligence as given by leading investigators in that field. For Thorndike, intellect is "the power of good responses, from the point of view of truth or fact."¹ Terman, on the other hand, says, "An individual is intelligent in proportion as he is able to carry on abstract thinking."² In the first definition, we undoubtedly have a behavioristic slant, although Thorndike does not strain himself to eliminate all reference to mental activity from his discussion. The second definition, which follows pretty closely that of Meumann, is decidedly mentalistic, as is also Freeman's view.³

Colvin's earmark of intelligence as that which an individual possesses "in so far as he has learned, or can learn to adjust himself to his environment,"⁴ is, as he suggests, very much like the received definition among psychologists and probably savors a bit of behaviorism, though the word 'learn' contains a good deal which may be taken either way. Pintner's

¹ E. L. Thorndike, 'Intelligence and its Measurement, Symposium,' *J. of Educ. Psychol.*, 1921, vol. XII., p. 124.

² L. Terman, *loc. cit.*, p. 128.

³ F. N. Freeman, *loc. cit.*, pp. 133-134.

⁴ S. S. Colvin, *loc. cit.*, p. 136.

definition differs from Colvin's only by the greater emphasis laid on "relatively new situations in life." Yet Pintner seems to be no thoroughgoing behaviorist, considering that he speaks of "mental tests calling into play the synthetical and analytical activities of the mind, reasoning, judgment and the like."⁵ Henmon's view is that "intelligence is intellect *plus* knowledge" which is amplified by the statement that "intelligence is indicated by the capacity to appropriate truth and fact as well as by the capacity to discover them."⁶ From this as also from the tenor of his whole discussion it may be inferred that he is not particularly favorable to the behaviorist position. Of all the thirteen members who participated in the symposium, so far as I can see, only two show a decided leaning towards a behavioristic interpretation of intelligence, and a third may be favoring it slightly. Of these, Peterson is of the opinion that "it is a mechanism for adjustment and control, and is operated by internal as well as by external stimuli,"⁷ and Dearborn believes that the commonly accepted definition of intelligence can now be adequately described "in terms of the current 'objective' psychology,"⁸ while Haggerty takes the position in his contribution that "Intelligence is descriptive of behavior and not of static component parts of the 'mind.' When one conceives of the

⁵ R. Pintner, *loc. cit.*, p. 140.

⁶ V. A. C. Henmon, *loc. cit.*, p. 196.

⁷ J. Peterson, *loc. cit.*, p. 198.

⁸ W. F. Dearborn, *loc. cit.*, p. 210.

mind as a 'state' or a 'structure,' the word intelligence becomes meaningless. The implication of *activity* is essential in the concept of intelligence." ⁹ Yet I am not sure that Haggerty would refuse to conceive intelligence in terms of mind. In his definition at the outset intelligence is made out to be "a practical concept of connoting a group of complex mental processes . . .". If I am right in taking it that Haggerty takes exception only to the static representation of mind and advocates a dynamic view instead, we may observe that only two out of the thirteen participants have been convinced as to the satisfactory application of behaviorism to the notion of intelligence.

The only direct allusion to behaviorism in the symposium is to be found in Woodrow's paper, in which he regards intelligence as a capacity to be envisaged in neither purely mental nor purely behavioristic terms. "Intelligence cannot be defined in purely mental terms, because the capacity for acquiring valuable modes of mental functioning is itself not mental. . . . On the other hand, intelligence cannot be satisfactorily described in purely behavioristic terms, because (I mention only one reason, one which is persistently overlooked by behaviorists) while the degree to which behavior is intelligent is simply the degree to which it attains success, success has no real meaning except by reference to some want, desire, intention, plan or pur-

pose.”¹⁰ But if intelligence cannot be described in purely behavioristic terms, what shall we do with the residue except to reinstate it under the mental régime?

The definition of intelligence as a capacity or power, it seems to me, suffers from insufficient analysis of the concept. It is in this defect that Woodrow's dilemma originates. A capacity of mind is not mind. Very well then. Is it the physical basis of mind, the nervous constitution? Then why not define intelligence as the nervous constitution or integration suitable for bringing about certain responses? The truth of the matter is that when we say our friend is an intelligent man, we don't mean to designate the basis of this intelligence, but simply to convey the notion that whenever *X* has occasion to perceive, discriminate, judge, infer, etc., he does so well, *i.e.*, he is borne out, in most cases, by subsequent events. It would scarcely do to wrest a word out of its setting in the minds of the millions of people who have used it and to give it an entirely different meaning which is foreign to the intention of the many intelligent people who have made the term current. When I am speaking about a coin, I should not welcome the suggestion that I mean metal inasmuch as a coin is made of some kind of metal. Intelligence originally meant understanding, comprehension; and it is in this sense that we employ the term now, too. Presumably intelligence testers are referring to the

¹⁰ H. Woodrow, *loc. cit.*, pp. 205, 208.

same concept as laymen when they speak of intelligence, or else the layman's concept which is perfectly understood in conversation deserves separate treatment and its seniority demands priority of attention over the technical term in vogue among intelligence testers.

Too much stress has been laid on such auxiliary words as capacity, power, ability, etc., in disregard of the fact that such words derive their actual meaning from the substantive with which they are coupled. Horse-power, candle-power and power of response are instances of three different applications of the concept power. The first two have their justification in the physical sciences; the third is merely an analogy.

The word response is even a more unfortunate interloper. On account of this empty concept, the significant core of the issue is lost to sight. The imbecile who notices and counts the different shapes of rocks by the sea-side "*from the point of view of fact or truth*"¹¹ is responding to the situation just as well as, if not better than, the scholastic philosopher of the mediæval age who discussed both *pro* and *con* the question whether a prostitute could by divine dispensation become a virgin again. Yet even from our modern enlightened viewpoint, because of his greater comprehension and vastly more complicated reasoning processes, which we could follow, the scholastic would be regarded as intelligent and the

¹¹ See Thorndike definition, *Supra*.

imbecile not. It is the thinking that is important; a response which is not the direct outcome of higher mental activity is negligible as a criterion of intelligence. Why then mix the wheat with the chaff for the sole purpose of reducing both to one category, as if without the word response, no one should have surmised that our thought might have been provoked by some situation? More than that, often the earmarks of intelligence are to be found in the sole fact that there is at all a response, whether good or bad, to a stimulus which an unintelligent person would never recognize as such. The true thinker, and perhaps it will not be taken amiss if I regard a thinker as intelligent, will often *create the stimuli himself*. *The creation of the stimulus is*, in such cases, *the response* and a much more intelligent response it is than many a successful move prompted by external influence. *To see a problem sometimes denotes a higher degree of intelligence than to solve one.*

The misplaced emphasis laid on such auxiliary words as 'ability' and 'response' is comparable with the grammatical stress placed on the word 'loan' in the school-boy's sentence structure when he asks "for the loan of a knife." What he wants is the knife and not the loan. So, too, speaking of the intelligent man we mean that *his higher mental operations are as a rule carried out on some more or less consistent plan*. The degree of intelligence can be determined only as a result of comparison of an individual's consistency and versatility in thinking

with the mental activity of other people in respect to these two traits.

In definitions of intelligence the word 'capacity' occurs, I should think, figuratively as an enduring condition or, perhaps better, reference. If an intelligent person had occasion to display his intelligence every minute of his conscious life, the reference to his *capacity* to think or to learn or to respond would be a redundancy. The story told about the plaintiff who brought suit against his neighbor for wanting to call him a liar is quite pertinent here as illustrative of the situation. "But how do you know he wanted to do that?" he was asked. "Well," was the reply, "if he didn't *want* to call me a liar, he wouldn't have said, 'You are a liar.'"

Much as there is temptation to view it as a capacity for responses or adjustments, the mentalistic conception of intelligence is still in the ascendant. The qualification of biological or behavioristic terms by the word mental is by no means insignificant. What is a mental response but a mental process or set of processes, once we recognize that the response part is frequently a behavioristic fiction, since in life, problems are not always given but many a time created by the 'respondent'? The same with slight modifications may be said about mental adjustments. Determining what it is that one must adjust himself to is the sign of intelligence more pronouncedly than the adjustment itself. We must finally then insist on the point already made that

intelligence is characterized by mental processes rather than by motor or glandular activity.

As we approach the typically behavioristic interpretation of intelligence we are confronted by a number of utterances that betray the specific pre-suppositions already exposed in the course of this discussion. Treating of the nature of mentality, Wieman rather startles us by pronouncing mind or mentality to be "a certain mode of doing things on the part of an organism."¹²

The incongruity between the terms so complacently linked together will be evident upon a close scrutiny of the sentence. Is it not somewhat novel, this idea of modality of organismal activity? Again, to set forth that the organism performs the mental operations, as is implied by Wieman, is on a par with holding that the body thinks! Mind, one would suppose, is extra-organismal, for an organism is, by definition, the living being with its physical structures and functions. Mental activity cannot properly be considered within that scope, unless we are to so extend the denotation of the term as to cause confusion between the original biological concept and its psychological superimposition. Yet Wieman is within his rights, seeing that he accepts the seemingly more fallacious alternative and enlightens us further to the effect that "mental effort is nothing else than organic effort" in a very delicate and tentative

¹² H. V. Wieman, 'The Nature of Mentality,' *Psychol. Rev.*, 1919, vol. XXVI., p. 230.

form. We have occasion here to note the fallacy of identifying coördinates.¹³ What havoc the word adjustment plays in modern radical theories of mind would prove an interesting piece of research. An instance of this multiple use appears in the same article where the observation is made that "if every tendency of the organism were perfectly adjusted to every other, mentality would disappear." Passing over the indefiniteness of the phrase 'perfectly adjusted,' which would require considerable explanation before the nature of the process could be understood, we should arrive at the conclusion that Wieman is stating a truism, or else he is guilty of a flagrant *petitio principii*. If his protasis means that all desires, wishes, purposes, impulses, etc., were to cease—if that is what he understands by a perfect adjustment, then he might as well have said "if all mental activity were to cease, all mentality would disappear"; for the only criterion of a perfect adjustment is necessarily the absence of tendencies like desire or purpose. More instructive would it have been to transpose protasis and apodosis in such a way as to bring out the converse, viz., that the disappearance of mentality indicates that the various tendencies of the organism have become adjusted to one another. In any case, we can recognize the circular mode of procedure here, viz., judging the absence of mentality by the perfect adjustment and the perfection of the adjustment by the disappearance of mentality.

¹³ H. N. Wieman, *loc. cit.*, p. 240.

Finally the definition of intelligence given in the summary of the article as "the process by which various stimulated tendencies of the organism are adjusted to the execution of a series of movements resulting in adaptation to the environment" must evoke a shrug of the shoulders on the part of the critical reader. Is a tendency of the organism wholly disparate from mentality? And does mentality always lead to adaptation? Did Socrates and Giordano Bruno adapt themselves to the environment, or shall we say perhaps that they lacked mentality? What, behavioristically, is the difference in adaptation between the martyr who willingly goes to the stake rather than renounce his principle, the daredevil who loses his life as a result of some foolhardy stunt, and the prehistoric animal that failed to survive the hardships confronted in the struggle for existence? Lastly, just how, physiologically or psychologically, does the stimulated tendency become adjusted to the execution of movements? Is there not a *hiatus* in thought here that needs clearing up?

Turning from the cruder to the more critical type of behaviorism as represented by Perry, we notice the endeavor to overcome the difficulties already outlined. "The important feature of docility is not adaptation to the environment, but the acquiring of specific modes of adaptation, and performance determined by the experience of adaptation."¹⁴

¹⁴ R. B. Perry, 'Docility and Purposiveness,' *Psychol. Rev.*, 1918, vol. XXV., p. 19.

Of greater significance is his warning held out to orthodox behaviorism against "any hasty or contemptuous dismissal of the traditional association of purpose with non-physical or 'ideal' entities"; and the "danger of confining our analysis too closely to the lower forms of mind," is explained by the fact that "most human purposes deal with 'objects' of hope, fear, or aspiration that find no place at all in the field of nature as that is defined by the physical sciences." ¹⁵

Perry's cautious procedure in his later articles as compared with his more zealous position a decade earlier, when he defined mind as "behavior or conduct together with the objects which these employ and isolate" or as "organization possessing as distinguishable but complementary aspects, interest, body, and objects," ¹⁶ should make us alive to a real departure in the direction of moderation evinced by the more circumspect representatives of the behaviorist movement.

When we stop to make the balance sheet in order to learn in what way behaviorism has furthered our knowledge in regard to the problem of intelligence, not merely learning, but grasping, discriminating, judging, interpreting, we come face to face with a minus quantity. The very substitutes in termi-

¹⁵ *Loc. cit.*, p. 7.

¹⁶ R. B. Perry, "The Mind Within and the Mind Without," *J. Philos., Psychol. & Sci. Methods*, 1909, vol. VI, 175. The term interest is employed in its biological sense.

nology that behaviorism has introduced are highly unsatisfactory. (Incidentally it strikes me that Perry's word *docility* is not a very felicitous designation for the capacity to learn, since docility bears a somewhat contemptuous connotation. The docile man is generally submissive and suggestible, lacking in initiative. It is clear, however, that Perry's meaning of the word is otherwise.) What boots it to know that expectation, desire, understanding or inference is probably a set of incipient adjustments, so long as we are not provided with the differentia? With the mental state, expectation or desire we are intimately acquainted. The incipient adjustments that are to replace as scientific material the mental states of which we have direct knowledge are not only hypothetical and speculative but vague and general. The hypothesis in the physical sciences is at least clearly formulated and, mathematically applied, it actually explains a number of phenomena by showing how one principle governs them all. The behavioristic hypothesis or assumption is a stagnant affair in that it usually promises a great deal and balks at the crucial point. We expect a mental experience to be translated into behavioristic components and are disappointed on learning that the experience reduces to the phrase 'a set of adjustments.' Are we to discard the analysis or our experiences for the sake of arriving at colorless conjectures or at commonplaces decked out in biological language?

CHAPTER XIV.

BEHAVIORISM IN THE SOCIAL FIELD.

- I. VANTAGE GROUND OF BEHAVIORISM IN THIS FIELD—GROUP MIND NOT AMENABLE TO INTROSPECTION AND NOT CORRELATED WITH TANGIBLE BODY—OLD PROBLEM OF ONE AND THE MANY—TROUBLES OF LAZARUS AND STEINTHAL—NO SUPERSOUL POSITED—BEHAVIOR A POPULAR TERM WITH SOCIAL WORKERS—BEHAVIORISTS REAP ADVANTAGE—GIDDINGS SUSCEPTIBLE TO *Zeitgeist*—MANY BOOK TITLES MISLEADING—MARTIN'S BEHAVIOR OF CROWDS—GROUP BEHAVIOR TECHNICALLY INACCESSIBLE—SUGGESTION TO BANISH GROUP CONCEPT FROM PSYCHOLOGY—IS THE GROUP A PSYCHOLOGICAL UNIT?—STUDY OF INDIVIDUAL IN SOCIAL ENVIRONMENT TELLS NOTHING ABOUT THE GROUP—in A CROWD NOT NECESSARILY OF A CROWD—GROUP CONSCIOUSNESS CHARACTERIZED BY HOMOGENEITY DISPLAYED ON PARTICULAR OCCASION—SPATIAL CONTINUITY INESSENTIAL TO INDIVIDUATION—SYNTHESIS DETERMINANT OF CONCEPT—MCDUGALL'S AND PILLSBURY'S VIEWS—BEHAVIORISM OFFERS NO WORKABLE SUBSTITUTE FOR GROUP MIND—
- II. RECONSTRUCTION OF ANCIENT TYPES POSSIBLE THROUGH GROUP CONCEPT BUT NOT BY BEHAVIOR METHODS—CULTURAL PRODUCTIONS NO MORE THAN NEURO-MUSCULAR ON WATSON'S PRINCIPLE—COLLAPSE OF SOCIAL SCIENCES WITH ACCEPTANCE OF RADICAL PLATFORM.

The vantage ground that behaviorism possesses in the social sciences arises from the fact that the notion of a collective mind seems somewhat colored by mysticism. The individual mind is an object of acquaintance for at least one person; and furthermore the individual mind is correlated with the individual body. Neither of these conditions holds

with the group mind. Such a mind cannot be introspected upon nor does it reveal any physical substrate with which it can be correlated. It has therefore been said that the collective mind is nothing but a fiction or an analogy after the individuals constituting the particular group.

It occurs to me that all such questions as to whether or not society is an organism, or whether or not there is such a thing as a group mind originate in the ancient problem of the One and the Many, the *locus classicus* of which is Plato's *Parmenides*. The concept of a group mind first elaborated by Lazarus and Steinthal over fifty years ago met with violent opposition even then, and the two lonely collaborators were obliged to keep repeatedly reminding their critics that their hypothesis did not imply the existence of a super-soul hovering above the individuals of a group, but that the concept of a collective mind was a requisite toward the understanding and interpretation of numerous phenomena which were inexplicable on the basis of the individual mind alone.

Since their days, the controversy kept raging without abatement, though the concept was tacitly accepted and used in most discussions of a sociological or socio-psychological nature. Lately, however, the tide has turned; the social sciences have also begun to feel the importunateness of our usurper with the result that behaviorism has, at least, nominally become popular not only with social reformers, social workers and mental hygienists, but also with

sociologists. One can readily see why the behavioristic attitude would appeal to dynamic people who are themselves interested in the conduct of their charges and not in the systematic explanation of that conduct. Such phrases as "adjustments to the environment" and "adaptation of the organism" are bound to "take" with the psychological tyro but it is not long before the paltriness of such explanations becomes apparent; and then either the subjective and the objective point of view become hopelessly confused, or else orthodox behaviorism is candidly repudiated toward the end. An instance of this I take from White's lecture before a class of community workers. After making much of the behavioristic attitude and little of the "old academic" psychology, he is constrained to "part company with the extreme behaviorists, who would discredit the internal evidence entirely."¹

The device by which Giddings seeks to work into his scheme of pluralistic behavior such conscious factors as ideas and feelings is palpably out of keeping with the ceremonious place he had accorded in his earlier work to the "consciousness of kind" notion as a basic principle in sociology. In spite of his efforts to keep up with the spirit of the day, it would not be just to set him down as a behaviorist in the strict sense of the word. He believes that differences and similarities among reactions are felt in

¹ W. A. White: 'The Behavioristic Attitude' *Mental Hygiene* 1921, vol. V p. 9.

consciousness and *perceived*. He talks of ideas and volitions, even though these are somewhat humiliated by the stigma of quotation marks attached to them now and then.²

We must not be misled by the behavioristic labels of recent books. Behavior is a convenient and specifically English term and has been pushed to the fore by the concerted action of biologists and behaviorists. Hence its wide vogue. In most of these books, by far the majority, no attempt is made to distinguish between the behavioristic and mentalistic issues. There is Martin's *The Behavior of Crowds*, for example. Is this book a behavioristic account of the crowd? Not at all. We have only to cite such utterances as the following to perceive the complete indifference of the author as to whether psychology deals with mind or with neuro-muscular and glandular reactions. "Every psychic fact must really be an act of somebody. There are no ideas without thinkers to think them, no impersonal thoughts are disembodied impulses" etc. For Martin, as for Le Bon, a crowd is a "mentality" of some sort,³ his thesis being that "the crowd-mind is a phenomenon which should best be classed with dreams, illusions, and the various forms of automatic behavior."⁴ We have already seen in a previous chapter how strained a sense the word behavior

² F. H. Giddings: 'Pluralistic Behavior.' *Am. Journal of Sociol.* 1920 vol. XXV pp. 396-7.

³ E. D. Martin: *The Behavior of Crowds*.

⁴ *loc. cit.*, p. 19.

must be taken in to include mental states like dreams, delusions and illusions. Martin's book has been written under the guidance of traditional psychology, with a Freudian flavor added to it. That is clear from the very chapter-headings: The Egoism of the Crowd-mind; The Crowd a Creature of Hate; The Absolutism of the Crowd-mind. Throughout the volume, more reference is made to the crowd-mind than to crowd behavior.

What appears to be at the bottom of this inclination to think in terms of mind, despite the title of the book, is the impossibility of *studying the behavior of a group as such*. The behavior of the group is no more accessible to the investigator than the mind of the group—a circumstance which is little, if at all, recognized. So far as strictly technical behavior is concerned, the minute responses and adjustments etc. etc., it would be nothing short of absurd to contend that they are amenable to observation under conditions of control. But even the gross types of behavior, such as the man in the street would be interested in, are not imputable uniformly to the group. Consider what goes on while a mob is said to be lynching a prisoner. The lynching is executed by perhaps not more than three or four men. Of the bulk of the mob, some may be running back and forth aimlessly, others may be shouting, still others may be experiencing some slight compassion for the victim. The introspective method would afford at least some clue as to what the constituent individual was doing

and experiencing, but the purely objective mode of procedure leaves us completely in the dark, unless some wizard should succeed in inventing a technique which would enable an observer to survey the whole performance in its individual parts, that is to say, the minutest act of every member, which may have a bearing on the entire incident.

Allport has an interesting though mortuary project to offer which would dispose of all our difficulties and problems and at the same time help the cause of behaviorism. He proposes, viz., to banish the group concept from psychology as a spurious character. He would have us study not the group but the individual in the group. The group for him is not a psychological unit.⁵

The consequences of such a drastic measure are at once recognizable as fatal to the possibility of expanding psychology so as to explain phenomena which lie beyond the realm of individual psychology. The line of experimentation, as outlined by Allport, which consists in observing the response of the individual when in a group as compared with his reactions when he is alone, has of course its merit as constituting a branch of psychology which studies the relation between the individual and the group. But in order to talk of such a relation, the group as a unit must be presupposed, and if a unit, it must be envisaged as a psychological unit, regardless of

⁵ F. H. Allport: 'Behavior and Experiment in Social Psychology' *Jour. of Abnormal Psychol.*, 1919-20, vol. XIV pp. 297, 298 ff.

whether the unity is accidental, as Allport maintains, or not. Consequently Menninger is quite right in pointing out⁸ that Allport has been begging the question throughout his article, especially where he sets forth that the neuro-motor system of the individual is the locus of *all* psychology, individual or social, and that further if we take care of the individual, the groups will take care of themselves.

The sweeping condemnation of group psychology, if acted upon, would leave us with a fearful void, after the labors of Lazarus, Steinthal, Bastian, and Wundt in Germany and Fouillée, Le Bon and Marie in France. The injunction to ignore the study of the group seems so palpably unjustified that it is difficult to believe that a psychologist was the author of it. The minutest study of the individual in a social environment will not disclose a single fact about the group of which he is a constituent any more than the study of oxygen and hydrogen would make known to us the properties of Niagara Falls, or any more than the knowledge of each of the letters of the alphabet would make us acquainted with Shakespeare's plays. The point made here seems to be commonplace, yet it has to be made in view of the position stated above—a position which amounts to the elimination of all psychological application to the group, and which would take for its *devise* the rather precarious maxim "Study the

⁸ K. A. Menninger: 'A Critique of a Criticism', *loc. cit.* 1920-21 vol. XV p. 278 ff.

individual in a group and you will know the group." If anything, the maxim should be transposed to read "Study the group, and you will know the individual." We certainly are methodologically bound to ascertain first what sort of an individual we have before us. A person may belong to a crowd or be seen to mingle with the crowd without being *of* the crowd. He may be an investigator, for all we know, and his conduct would therefore not give us the least insight into the "behavior" of the crowd.

To return now to our main issue, we have seen that the notion of an independent collective consciousness must be rejected as an analogy. It will be conceded that the consciousness of a group consists of the consciousnesses of the constituent individuals integrated in such a manner as to form a unity. At the same time it should be recognized that every individual possesses a social phase to his consciousness, and that the greater the variety to his relationships and activities, the more components will his consciousness present. At any given time, for certain purposes, we may abstract then the national consciousness, let us say, of seventy million Frenchmen and treat the homogeneous aggregate, especially if inspired by some national event, as a unit. This unit would constitute an abstraction, but an abstraction no less necessary than the atom or electron. In this way it is permissible to speak of a race feeling, of an audience thinking, or of a community willing. It is not a body of individuals who are doing the thinking or

willing, but an organized unit which is characterized by homogeneity and in which the members have for the time being lost their individualistic consciousness, bringing to the fore in its place the particular social consciousness of the occasion. To urge that the individual consciousness is always connected with a body, while the collective consciousness cannot be referred to a material unity but to a collection of units, is indicative of the materialistic bias which renders it nigh impossible for some people to grasp a conceptual fact without its being paralleled tangibly in the material world. What apparently is being missed by critics of the group-mind notion is the spatial continuity so essential as a principle of individuation in the biological organism. That such continuity is unessential to the interaction of minds seems almost too obvious to point out, and it may be added that even a group of organisms could very well be thought of as forming a biological unit, if only the various functions of the organs in the group could show the interaction and integration that the group mind reveals in its sphere.⁷ It is not the continuity but the synthesis, the unified character of the component, which is the determining point in the concept of a unit.

This view of group psychology, which is akin to

⁷ W. M. Wheeler: 'The Ant-Colony as an Organism' *Jour. of Morphology* 1911 vol. XXII p. 310.

⁸ W. McDougall: *The Group Mind* pp. 9, 18, 47 and chapt. VII.

McDougall's⁸ and Pillsbury's,⁹ does not posit an introspective mind for the group, but strives to understand the collective *quale* of the various mental processes in a number of individuals regarded as forming a group. Granted that this collective mental organization is not psychologically an *elementary* fact, it must yet be proven that psychology does not deal with *complex* facts.

Behaviorism, as has already been shown, does not offer us any workable substitute for the group mind, as the very objections to such a concept hold true, with slight variations, for the notion of group behavior. We are just as much in the dark *about the specific responses of a group as we are about its mental operations*. If anyone should tell me that I have no way of ascertaining what a company of soldiers is thinking about, I should come back with the retort that neither can we say anything in any significantly scientific way about its behavior. That the soldiers are marching or resting may be true, but if such were the kind of information that would satisfy a behaviorist, if such were the materials on which his science is built, behaviorism would very soon be supplanted by everyday common observation. If there is to be any analysis at all of what the soldiers as a whole are experiencing, behaviorism can offer but a very meager account when compared with the

⁹ W. B. Pillsbury: *The Psychology of Nationality and Internationalism* Chapter VII.

results yielded by introspective psychology. The proper classification, interpretation and colligation of the introspective records are certain to give us a representation of what has happened to the group, and if the records reveal lack of uniformity in thinking or feeling, we may look upon the group as possessed of the same characteristic met with in multiple personality.

In a most critical and analytic article—the most thorough I have read on the subject—R. B. Perry shows himself in disagreement with the social mind conception. Those who make much of this notion, he claims, “emphasise the fact that a man’s behavior in a group or in a crowd differs altogether from the same man’s behavior when alone, or at home”—¹⁰ a reaction which Perry puts on a parity with the change in a man’s behavior under any new conditions. It occurs to me that Perry overlooks the two essential features in group mentality, which may be recognized in (a) the temporary abeyance of states of consciousness referring to the individual; (b) the homogeneous mental content of the members of a group called forth by a certain occasion. Thus, when an eloquent orator sways his auditors so that they consider themselves for the moment merely as agencies to help his cause, their mental configuration is marked by an absence of self-reference and a same-

¹⁰ R. B. Perry: “Is There a Social Mind?” *Am. Journal of Sociology*, 1922, vol. XXVII, p. 735.

ness of purpose. Likewise, when millions of Americans read of the sinking of the "Lusitania," there was the same general emotion felt by the readers, though scattered over a territory covering thousands of miles. Neither the distance nor the remoteness is sufficient to counteract the homogeneity of mental content as the outstanding criterion. The Jews today, whatever country they happen to be natives of, will cherish a similar regard for their martyred ancestors in Spain.

Perry underestimates the significance of *mental interaction* when he likens the change of a man's behavior in the presence of a crowd to the change of his behavior in the presence of an inanimate object. Surely, in the latter situation, there is not manifested the remarkable phenomenon of heterogeneous mental states becoming homogeneous—players becoming *an* orchestra, uniformed men becoming *an* army. In Perry's illustration, it is true that the sight of water affects the person who is on land. It is also true that the water may be or will be affected by the action of the man, but the most characteristic property of the water (fluidity) and the most characteristic quality of man do not *tend to assume the same aspect* as is the case in human interaction. This assimilatory phenomenon gives us the right of adopting the group concept in psychology as a scientific requisite for which no behavioristic equivalent can be found.

II

Let us, moreover, consider how behaviorists would proceed to study by their methods the behavior of the ancient Greeks or Romans. Group psychology speaks of the Greek mind and tries to reconstruct it from the writings of representative Greeks and the traditions, folk lore, mythology, religion, language, etc. of the Hellenic race, just as Cuvier was said to have reconstructed the species of an organism from the examination of a part of an organ. It is due to this method, incomplete as it is, that we have some general ideas about the ancient Greeks, Romans, and other now extinct peoples. But what can we expect of the behaviorist's endeavors? To him all that has been written by and about the Greeks in the last analysis comes down to innervations and contractions of certain muscles, and even that must be inferred; for in reality what he has before him is a series of marks made by the press in the last instance, but occasioned by a number of agents from the original writer of perhaps thousands of years ago to the press-feeder of to-day. The behaviorist would be called upon to explain in what respect the copyist's work is to be regarded as inferior to the author's, since the action of the musculature is not essentially different, in the two cases. Furthermore, in comparing Greek and Roman philosophy, are we comparing the

laryngeal and other muscular contractions of individual organisms? These problems scarcely exist for the group psychologist who is comparing types of mind as exemplified by representative men of each of the groups passed under review. The behaviorist, however, will have his hands full attempting to obtain a footing where the peg has deliberately been removed by none other than himself.

The upshot of this chapter is that the whole branch of collective psychology, and with it most of the social sciences, must fall with the acceptance of an orthodox behaviorism; and investigators in the social field who are so eager to align themselves with the latest movements without working out the implications as affecting their own science are simply playing into the hands of their mortal foes.

Part IV.

**PROSPECTIVE: OUTLOOK
OF THE CONFLICT.**

CHAPTER XV.

THE FUTURE OF BEHAVIORISM.

BEHAVIORISM INDICTED ON SEVERAL COUNTS—REASONS FOR SPREAD OF MOVEMENT IN AMERICA—NO SUCCESS ABROAD—AMERICAN PSYCHOLOGY THREATENED BY ISOLATION—BANE OF ELIMINATING INTROSPECTION IN EXPERIMENTATION—ANIMAL PSYCHOLOGY DEFICIENT BECAUSE OF SPEECHLESSNESS OF SUBJECTS—NO FUTURE FOR BEHAVIORISM IN PSYCHOLOGICAL LABORATORY—BORING ON STIMULUS—ERROR—MIDDLE TERM NOT DISCOVERABLE BY OBJECTIVE MEANS—STUDENTS BRED ON BEHAVIORISM IGNORANT OF PSYCHOLOGY—MUCH OF THE NEW TEXT-BOOK MATERIAL ONLY SPECULATION—UNITARIENESS IN MENTALISTIC CONCEPTION—VALUE OF BEHAVIORISM—INFLUENCE ON PHYSIOLOGY—BEHAVIORISM NOT A SCIENCE BUT A CONNECTING LINK, A BRANCH OF PHYSIOLOGY—ITS OVERWEENING Demeanor TOWARDS PSYCHOLOGY—COMTE'S OBJECTIVISM AND HUXLEY'S REPRIMAND—EPIGONES OF COMTE WORSE OFF—ARGUMENTS AGAINST PARALLELISM—ARGUMENTS ANSWERED—RUSSELL ON RELATION BETWEEN PSYCHOLOGICAL AND PHYSICAL PHENOMENA—"NEUTRAL ENTITY" VIEW NO REFUGE FOR NEO-REALIST BEHAVIORISTS—DECLINE OF BEHAVIORISM.

We now come to a series of weighty questions which we must attempt to answer with an unbiassed mind. This book has had for its purpose the confutation of the claim of behaviorism to the title of psychology. I have tried to show that (1) the concept of behavior is too general to afford us the foundation for a separate science, (2) behaviorism presents most of the difficulties peculiar to traditional psychology and many more, (3) behaviorism, in its restricted sense, seeks arbitrarily to dominate

a field which is not, *ex hypothesi*, under its jurisdiction by bowing out of court everything which does not fit into its narrow framework, and (4) behaviorism does not readily lend itself to application.

With such charges directed against it, one may wonder how the movement has been able to expand so as to divert the energy of many American psychologists into dubious channels. There are a number of reasons for this circumstance, some of which have already appeared in the chapter on antecedents of behaviorism. Partly the spread of behaviorism will be accounted for by the time¹ and the place. Let us note that this is a practical age we are living in, and anything which is connected with visible movement and action will have a better chance of thriving generally than a principle which goes behind this activity. Secondly, Americans as a national type possess what phrenologists call the motive temperament. Pragmatism, it will be recalled, has often been contemptuously referred to as a distinctly American philosophy; and behaviorism is closely allied with, if not the direct outgrowth of, pragmatism. The pragmatist is primarily interested in the workability of an ideal; the behaviorist is concerned with the work of an organism. It would seem that concepts with a dynamic setting would appeal far more to the American mind than static notions; and though mind and consciousness are by

¹ H. R. Marshall: 'Is Psychology Evaporating?' *Journal Philos. Psychol. and Sci. Meth.* 1913 vol. X p. 710.

no means static concepts, they do not bear the stamp of tangibility which attaches to physical movements.

Then, again, we must remember that behaviorists because of their revolutionary spirit, will be apt to make propaganda and recruit a number of converts from their classes in college, the pseudo-simplicity of the behavioristic explanations acting as a powerful agency for such conversions. The novelty of the point of view constitutes a leading attraction for the student who is always eager to combat "old-fogeyism", and the rosy illusion that now all the puzzles of the mind are to be explained through measurably objective methods modelled after those employed in the physical sciences draw him deeper and deeper into the materialistic maelstrom which is bounded by stimulus on the one side and response on the other.

For all this array of advantages, it is noteworthy that behaviorism has not made any headway in any other country. The so-called objective psychology of continental physiologists is not identical with behaviorism, and even were the two to be identified, it would have to be realized that, so long as physiologists alone are willing to immolate the science of mind, psychology is still secure. With the fullest appreciation of the psychological activities carried on in the United States, one can scarcely anticipate a universal shift in point of view as regards the nature of our science on the strength of representations made in one country alone, were all the

psychologists in this country to transform themselves into behaviorists. The fact that with all the behavioristic output in American periodicals, the doctrine has not been accorded the recognition of so much as being discussed anywhere except in England, and that too in a scanty measure, is sufficient evidence that the European mind is impervious to this phase of the modern materialistic movement.

There is no viewpoint in the history of philosophy which has suffered from national isolation to the same extent as behaviorism is doing now. It is being snubbed not on account of its radicalism but because of its shallowness and lack of perspective. The fruitless labors expended on translating conjecturally into objective language what requires a good deal of subjective interpretation to understand—phenomena which each one of us is thoroughly familiar with—savor of the puzzle solving that many of our tired business men like to indulge in as a recreation after their strenuous day's work.

Neither in the laboratory nor in the class-room has behaviorism been able to fulfill its promises. So much has been made of conditioned reflexes of late that several investigations have been undertaken in various laboratories with the purpose in view of eliciting such reflexes in subjects after a period of training. In one investigation which I happen to know of, introspection was eliminated as irrelevant to the problem. The experimenter in this case had put in a considerable period of faithful

work in the cause of behaviorism, but must have been sorely disappointed at the meager yield. A maturer psychologist had warned him that he would strike up against a middle term—consciousness—without the exploitation of which the data would become almost meaningless, and this anticipation was fully borne out.

The only behavioristic problems that can be worked out successfully in the laboratory are purely physiological investigations or statistical accounts of acts and movements. It has been quite frequently observed that animal psychologists are strikingly deficient in the interpretation and evaluation of their results. This defect has sometimes unjustly been attributed to the insufficient mental grasp of these experimentalists, but, I should think, the actual trouble lies in the speechlessness of the subjects experimented with and consequently the incommunicability of their experiences.

In the psychological laboratory, behaviorism does not appear to have any future except in conjunction with or under the guidance of traditional psychological procedure, the one supplementing and checking up the other. Left to its own resources, behaviorism betrays its helplessness by resorting to speculation, adorned by symbols, and the repeated use of general terms in all sorts of connections. Such stereotyped words and phrases as "habit-systems", "response", "reaction-pattern" are supposed to serve as explanations for the many and

varied mental phenomena we have been studying for the last forty years.

The inadequacy of an objective investigation of response unaided by introspection has recently been aptly exposed in a paper by Boring on the stimulus-error. The behaviorists have never so much as given a thought to this source of error naturally because their method was to study an act entirely in terms of stimulus and response. The error then which might cause so much confusion in an introspective protocol would, now that the line of approach is changed, supposedly be eliminated; and the very condition which formerly gave rise to the error apparently must now be regarded as the basis of scientific fact. "But", points out Boring, taking his evidence from the limen of dual impression upon the skin, "if only the end-terms of stimulus and response are controlled, a univocal one-to-one correlation between stimulus and response is not possible." There are, according to him, too many possibilities of connection in the pathways owing to such contributory factors as attention and criterion which the objectivist does not begin to consider. "The only way to get out of the dark," Boring suggests, "would be to study the effect of stimulation, of attention, and of criterion by taking hold of these dependent series at their intermediate points, thus providing ourselves with a complete knowledge and control of the entire psychological situation." ²

² E. G. Boring: 'The Stimulus-Error': *Am. Jour. of Psychol.* 1921 vol. XXXII, p. 469.

What behaviorists are obdurate in is their constant refusal to recognize that "the failure to control the attitudinal factor implied in the acceptance of a criterion, and the attentional factor, again and again results perforce in an equivocal determination of these responses, which is nothing more nor less than a 'stimulus-error'." ³

As usual one may expect the rejoinder that all these middle terms which Boring alludes to can be discovered by objective means. They have not as yet been successfully handled, but wait until the proper technique is invented. The reply to such a promise must obviously be that in order to devise a proper criterion for testing the technique, the aid of introspective data must be resorted to. It should be realized that if a tool is not always a prerequisite for the construction of other more elaborate tools, it at least constitutes an auxiliary instrument toward that end.

As for teaching purposes, behaviorism is a complete failure. The student who is reared on this conglomeration of neurology, physiology, biology and journalism may benefit possibly by the enthusiasm of his radical teacher, but in the long run he will find that to discuss his subject intelligently would require the background and the systematic concatenation of facts relating to a homogeneous sphere that his older contemporaries were made acquainted with in their days. I have spoken with

³ *loc. cit.* p. 470.

many students who have been fed on the new brand of psychology only to learn how cramped they were in their views, how circumscribed their scope was, and how uncritical their attitude. Such students possess a repertory of detached bits of data and views which they later seek, in free lance fashion, to affix to every new theory and movement. Certainly when there are no moorings, drifting becomes an easy matter; and how good it is to set out on new adventures and make new attachments!

Already it has become customary for workers in the physical and natural sciences to taunt psychologists with the easy manner in which different explanations are given of the same fact. The truth of the matter is that the behavioristic movement has lent an added impetus in this direction. Exempt from the rigorous demands of physiology, behaviorists may talk to their heart's content of what the organism is doing and what a given mental phenomenon amounts to in terms of reaction-patterns without actually running the risk of direct contradiction. A series of diagrams illuminated by symbols gives the discussion an air of plausibility and scientific respectability which further critical inquiry shows to be inflated. Constructiveness is, to be sure, a laudable characteristic, but when this constructiveness manifests itself in an attempt to square the circle or to invent a *perpetuum mobile*, we can only lament the fact that so much precious energy is going to waste.

The student who is lured to the pyrotechnic camp of our revolutionaries is too often tempted by the promise of achieving wonders in an as yet unexplored region. Now that all mental facts can be discussed in neuro-muscular and glandular terms everything seems so simple and rosy that classic psychology is unceremoniously discarded. Should the same student make it his business to become conversant with the older treatment of a topic like perception and its various phases, he would unavoidably, unless he has grown thoroughly partisan, be struck with the poverty-stricken facts that behaviorism has to offer on that subject. The student bred in a behavioristic atmosphere accepts the doctrine *en bloc*. Given the opportunity to examine and compare the subject-matter on a given phenomenon as treated from the two opposing angles, he would most likely find himself deriving a great deal more satisfaction and benefit from the traditional treatment. The unitariness inhering in the mentalistic conception contrasts so sharply with the sketchiness of a behavioristic psychology that the student of the latter often experiences the greatest difficulty in formulating a fact pertaining to his study without stumbling on purely physiological ground. There is also much in his daily experience that behavior psychology has been obliged thus far to ignore, with the result that in his quest for a solution of his problems he is thrown

upon the fascinating reveries of psychoanalysis as an inexhaustible reservoir of resources.

That behaviorism possesses a certain value goes almost without saying. *Its coming into being really affects the future of physiology rather than the progress of psychology.* Physiology, in the broadest sense of the term, will henceforth encompass not merely the workings of the individual organs but the activity of the integrated organism. As a name for this extension of physiology I should propose the term *behavioristics*.⁴ In any case, the term behaviorism is a misnomer. Its very suffix points to the lack of confidence on the part of its originators. No science prepared to stand on its own feet would tolerate a like ending. The suffix "ism" is invariably associated in our mind with either a theory or a movement. If behaviorism is only a theory according to which all mental phenomena can be accounted for in a materialistic manner, it must not claim the place of a science. A theory, even if it is subsequently verified, cannot become the whole of which it is *ex hypothesi* a part. Should the characteristic phase of the theory consist in the belief that all conscious and unconscious acts can be controlled and predicted, it must again be noted that a theory does not, even if true, take the place of a whole science. Darwinism, we must remember,

⁴ Since writing the above I learn from J. S. Moore's *The Foundations of Psychology* (p. 58) that the designation of *praxiology* has been suggested by Mercier and Dunlap to cover the facts of the proposed new science.

never aspired to such pretensions as to set itself up as the science of biology. It has modified the science with which it was most closely connected, as well as other sciences, but who would ever think of identifying the doctrine with the department in which it has arisen?

As a branch of physiology, behaviorism would serve a useful purpose in bringing together still more closely two allied sciences. Both psychology and physiology would gain in this way. When, however, a tug tries to assume the proportions of a man-of-war, it must be held in check and put to the work for which it was originally intended. Many are eager to take a hand in the steering of the tug, for it takes less equipment to run a tug than to manage a larger vessel.

The objectionable feature of behaviorism does not lie in its claim to a separate existence. Indeed in its properly restricted field as outlined above, it really fills a want; and even introspectionists should encourage its efforts and promote its aims as a *coördinating science*, but when the movement proceeds so far as to make on its behalf the most overweening representations, at the same time doing its utmost to demolish the magnificent edifice so painstakingly and at such great sacrifice erected, it destroys its own proper function and spends itself in vain endeavors to undermine the foundations of psychology. Consider what consequences would ensue if the clerk in a concern should act as if he

were the manager and make an attempt to discharge his superior's duties. It is here that the reprehensible move of behaviorism reveals itself.

Though of a more organized kind, it is not the first *attentate* that psychology has been able to ward off successfully. The swinging of the philosophical pendulum could not but affect psychology, separated though it may be from its earlier surroundings; and the swing of positivism half a century ago came near making a clean sweep of all psychology. Look as intently as we might, it would have been impossible for us to discover in what mysterious manner Auguste Comte had dispensed with psychology in his classification of the sciences. Only from his general views could we learn that the science of mind was for him non-existent after the Metaphysical Age, and that its remains were sent to the department of physiology for purification and re-incarnation. History does not repeat itself, but the bias of men's minds is likely to stand out boldly at one time more than another, and the dual inclinations of *homo sapiens* are perennially to fight for the ascendancy in thought. Behaviorists are as a rule confident that their methods and findings will supplant those of the older psychology. Few of them stop to consider that their contentions were known already to Huxley who, epiphenomenalist though he was, opposed their exaggerated objectivism which rang out far and wide under the spell of positivism.

How appropriate the following passage addressed to Comte's followers sounds at the present time! " . . . The positivists, so far as they accept the teachings of their master, roundly assert at any rate in words, that observation of the mind is a thing inherently impossible in itself, and that psychology is a chimera—a phantasm generated by the fermentation of the dregs of theology. Nevertheless, if M. Comte had been asked what he meant by '*Physiologie cérébrale*' except that which other people call 'psychology'; and how he knew anything about the functions of the brain, except by that very '*observation intérieure*', which he declared to be an absurdity—it seems probable that he would have found it hard to escape the admission, that, in vilipending psychology, he had been propounding solemn nonsense."⁵

We must remember that at the time Comte resolved to ignore psychology, there was no laboratory in which the science could formulate its principles. Everybody accepted his own self-observation as final, and individual experiences were sometimes universalized into laws. There was surely more justification then for slurring a discipline which was at the mercy of each psychologizing individual. But what a change these last fifty years have wrought in the development of this study, and how rigid and definite its results are in comparison with the science of which Comte was the founder! If

⁵ T. H. Huxley: *Hume with Helps to the Study of Berkeley*. P. 62.

Comte had lived in our own time, he doubtless would have realized, as do some of the most eminent sociologists of our own day, that only in a systematic descriptive and analytic psychology can sociology hope to find its basic principles.

The epigones of Comte cannot plead the same limitations of the age. Psychology has established itself since the day of positivism as a full-fledged science, and is able to offer a mint of information to the world. For behaviorism to try to supplant psychology is like a midget's attempt to impersonate a giant. A specious argument is sometimes put forth on behalf of behaviorism by the more thoughtful of its votaries. The argument is directed against psychophysical parallelists and is apt to carry some weight because of its scientific appeal. It is implied in Bertrand Russell's evaluation of behaviorism in his recent book.⁶ Briefly stated, the line of reasoning is this: parallelists admit at least theoretically that for every mental process there is a neural correlate. Now, since the mind is not an object of scientific investigation, while the physical delineations (stimulus, physiological processes and behavior units) of the mental process are amenable to observation, then why not study the latter series and ignore the mental series as inaccessible and unworthy of our efforts? If the two series run absolutely parallel to each other, we know the one when we know the other. Thus instead of bother-

⁶ B. Russell. *The Analysis of Mind*. P. 5.

ing about the sensation of red, we need only describe the wave length, the physiological apparatus and the neural processes involved in conditioning the sensation.

Many reasons may be given for rejecting this argument: (1) Parallelism is generally accepted only as a *heuristic* principle, and no one can be quite certain of the fact that every mental change is accompanied by a neural change. (2) The neural processes involved in the more complex mental processes are far from being observable, as has already been shown to be the case. (3) Did the two series consist of parallel terms with relations of the strictest one-to-one correspondence, and were, moreover, all the possible neural changes amenable to direct observation, we should still maintain that in addition to the physical and physiological facts, we are interested in the *mental phenomena*; and (4) only through the understanding of the mental phenomena can we hope to build up the physical series that is to act as our scientific guide. The force of the third reason, I am afraid, is not fully appreciated, because it is not generally realized that science can not be wholly divorced from the conditions and interests of life. Our aesthetic interests and daily intercourse demand that we study the mental phenomena which we experience, seeing that an emotion, a volition, a desire, a pleasant feeling—all these are part and parcel of our existence. Surely such very important facts must come within our sci-

entific purview and must be assigned some special domain.

If all psychology could be translated into physical terms, I should still insist that my chief concern is with psychology. Whoever wishes may devote his life to physics. Russell may be quite right in thinking that "what has permanent value in the outlook of the behaviorists is the feeling that physics is the most fundamental science at present in existence." Consequently let them turn physicists. Surely we must not be compelled to draw the conclusion that psychology ought therefore to be converted into physics, especially as Russell tells us in the very last sentence of his *Analysis of Mind*, that "Psychology is nearer to what actually exists," for "physical causal laws, strictly speaking, can only be stated in terms of matter, which is both inferred and constructed, never a datum."⁷

Nor can behaviorism look for succor in the "neutral entity" theory of neo-realists, since on their reasoning, emotion, feeling, perception, intention and like experiences must be entities. It must, therefore, be explained why one type of entity is to be scientifically ignored or transmuted into another kind of neutral entity.

If behaviorism has succeeded in invading some of our largest universities as well as many of the smaller colleges, it is mainly because its propaganda has received such little resistance on the part of its

⁷ *loc. cit.* p. 308 cf. also p. 297 ff.

opponents. A decade of sanguine exposition of the doctrine has failed to yield the promised results. A wave of disappointment at the situation is already noticeable among the American psychologists as a body, and it will not be a misrepresentation, I hope, to say that the behavioristic movement has already passed the zenith of its glory. The term *behavior* is, of course, as popular as ever, but more than once, the endeavor has been made to distinguish explicitly between behaviorism and a psychology which makes use of terms like behavior.⁸

⁸ R. F. A. Hoernlé. 'A Philosopher's Comment on the Behavior of Behaviorists'. *Proceed. University of Durham. Philos. Proceed.* 1920-21 vol. VI.

CHAPTER XVI.

THE FUTURE OF PSYCHOLOGY.

CRITICAL STAGE OF PSYCHOLOGY—LAST DECADE MARKS TRANSITION PERIOD—MANY SYSTEMS OF PSYCHOLOGIES MELTED IN AMERICAN CRUCIBLE—ICONOCLASM UNCALLED FOR—PRINCIPLES OF SCIENCE NOT PERMANENTLY FIXED, BUT CENTRE OF REFERENCE IS—SUCCESS OF REVOLUTION MEASURED BY UNIVERSALITY OF OPINION—PRESENT REVOLT IN PSYCHOLOGY ONLY LOCAL—BEHAVIORISM MANOEUVRING ON FOREIGN TERRITORY, WHILE PHYSICAL RELATIVISTS OPERATE ON OWN GROUND—WEAKNESS OF PURELY INTRO-SPECTIVE PSYCHOLOGY—DYNAMIC PSYCHOLOGY—INTROSPECTION ENCOURAGES INSTEAD OF EXCLUDING SUBSEQUENT EXPLANATION—OVERLAPPING IN SCIENCE A NECESSARY EVIL—WOODWORTH'S DIFFICULTIES NOT INSUPERABLE—WARREN'S UNCONVENTIONAL DEFINITION OF PSYCHOLOGY—OBJECTIONS TO HIS DEFINITION—COMPROMISE POSITIONS BETWEEN PSYCHOLOGY AND BEHAVIORISM ONLY MAKESHIFTS—NO CONTINUITY IN SUBJECT-MATTER OF SUCH HYBRID FIELDS—PSYCHOLOGY TO BE BROADENED ESPECIALLY IN AFFECTIVE DEPARTMENT—ACADEMIC PSYCHOLOGY TO TAKE ITS DATA FROM LIFE AS WELL AS FROM LABORATORY EXPERIMENTS—SELECTIVE POLICY NEEDED—GUIDED BY PURPOSE OF SCIENCE—DISCOVERY VS. INVENTION—RÔLE OF MOTIVATION PSYCHOLOGY—DANGER OF MISUSE—CHARACTERISTIC OF PRE-EXPERIMENTAL STAGE—VARIABLES IN PSYCHOLOGY MORE ELUSIVE THAN IN PHYSICS—HUME'S ATTEMPT AT AN EXPLANATORY PSYCHOLOGY—SPINOZA'S GEOMETRIC PSYCHOLOGY—STRENGTH OF MODERN PSYCHOLOGY.

Psychology is passing through its formative, hence critical stage, in this decade. No other science presents so many phases as psychology. Aside from the many branches that have grown out

of this discipline, its progress has brought to light a number of kaleidoscopic views, each one holding the attention of psychologists for some time. We have had rational psychologies, empirical psychologies, descriptive psychologies, explanatory psychologies, analytic psychologies, mechanistic and animistic psychologies, structural and functional psychologies, causal and purposive psychologies and dynamic psychologies. Some of these psychologies succumbed rapidly, others have stood the storm and are still claiming a place under the sun. America, the melting-pot of nations, seems to hold also the crucible wherein most of the psychologies are undergoing a process of assimilation.

It is not to be regretted that there has been such a procession of psychologies since Wolff's dichotomy some two hundred years ago, but the situation will be decidedly hopeless if no sooner is there manifested a tendency towards establishing a stable body of facts and a definite point of view than some iconoclastic outbreak will set in disrupting the entire organization and producing discord. Were psychology a mode of artistic expression, such infusions of new blood would be a boon; presumably, however, we are dealing with facts and not with interpretations which are in their several forms equally good because each expresses a certain phase of beauty that the other does not.

To be sure, we are not so naïve now as to think that the principles of any science are so permanently

fixed that they are never in danger of being supplanted. One of the greatest revolutions in the physical sciences is taking place in our own day, but who would be so bold as to compare the behavioristic movement with the endeavors of Einstein and other representatives of the relativity theory in scope as well as in significance? The universal discussion of the latter is in some degree a measure of the importance attached to the recent findings in the field of the physical sciences while the practically universal silence, except in this country and in England on the questions raised by behaviorists is an indication that their pretensions did not manage to obtain a hearing abroad. It were idle to reply that only here in America have we been able to see the light, and that the European psychologists are either behindhand or too obtuse to realize the import of the behavioristic doctrine. Nor can the plea be advanced that the American radicals have been particularly modest in bringing forward their claims.

The physical relativists, unlike the behaviorists, have been manipulating the same formulae, the same basic principles as their predecessors and have reached other conclusions on the strength of their verified predictions and on evidence which is unexplainable in the light of the older theories. Behaviorism is very far from boasting of such achievements. What immunity it enjoys against complete banishment is derived from its manoeu-

ving on foreign territory. For this reason it must be held that while the opposing camps in the physical and natural sciences were all within their boundaries, and must therefore have been regarded even by the most conservative of their colleagues as co-workers in the same science, the behaviorists, in so far as they refuse to deal with mind or consciousness, by that very stand, forfeit the right of being classed as psychologists; and it is immaterial whether they consider the forfeiture a loss or a gain.

It must be conceded that there has developed a growing dissatisfaction with the aims of a purely introspective psychology. The grievance has been clearly formulated by Woodworth in the passage quoted here: "Casting our eye over the results and prospects of psychology considered as a study of consciousness, the doubt arises whether this is, after all, the psychology that we came out to see. It is impossible indeed that a description of consciousness, however perfect, should fully satisfy the psychological interest and curiosity. It cannot pretend to tell us all we wish to know of mental life and performance. Its most obvious deficiency lies in the fact that mental processes are not entirely conscious, so that consciousness gives but a fragmentary picture of the real course of events in perceiving, remembering, thinking or acting. A few instances will make this plain. An act, at first unfamiliar and executed with consciousness of its

several parts, becomes with repetition fluent and automatic, and attended by little consciousness. What shall we do in such a case? Shall we let the psychologists study the doing of the unfamiliar act, but turn over the study of the well-trained act to some other science, as physiology? This would be an ill-conceived division of labor, since it would prevent the genesis of the well-trained act from being followed and understood. Again any complex mental act though partly in clear consciousness is in part only dimly and in part not at all conscious, yet certainly the act should be studied as a whole.”¹

That seems to be the theme upon which most of the saner radicals are harping in their disappointment over the prospects of traditional psychology. The complaint it occurs to me is based on a misconception. In the first place, we should have to search far and wide for a psychologist who restricts the scope of his science to the mere description of consciousness. The Würzburg experiments on the higher thought processes may be adduced as proof to indicate that even in this will o’ the wisp region of psychology, Marbe, Messer and Watt attempted to catch the processes of which we are not usually aware, and did not hesitate to interpret their raw data in non-introspective terms. It seems hardly fair to the mentalist to confine him strictly to the study of introspective consciousness inasmuch as he is eager to investigate all degrees of consciousness—

¹ R. S. Woodworth: *Dynamic Psychology*. P. 24.

from the most rapt attention to the elusive marginal states fading into unconsciousness. There is no reason why he should not include under his purview the subject of habit, for who can tell at what stage of the learning process consciousness evaporates? Surely there is nothing incompatible between a thoroughly mechanized act and an accompanying conscious process. The act will of course to some extent be modified by the accompaniment and yet it is not precluded from the category of habit.

Secondly, it is well known that every science includes in its scope material which belongs just as appropriately to other sciences. So long as our classificatory scheme rests on abstractions as it necessarily must, just so long shall we have to become reconciled to a certain amount of overlapping in the sciences. We can never fix an exact boundary line between physics and chemistry or between biology and physiology for the reason that the same fact or phenomenon may reveal two or more different phases each to be treated in its own sphere.

It seems strange that this specific difficulty which appears to trouble not a few psychologists has not affected any of the other scientists in the least. Text books in physics contain not only mathematical formulae but references to the main auditory phenomena. Similarly we are able to find in physiological treatises chapters dealing with the chem-

istry of the blood and the psychology of after images. Must the physiologist apologize for his appropriations, or must he define his field so broadly as to make room for the various seemingly digressive phasic treatments that enter into the warp and woof of every concrete science? Why then should the psychologist be deprived of the right to discuss reflex action and habit as the necessary genetic steps in the development of volition as well as by way of contrast between conscious and unconscious acts?

Probably Woodworth's difficulty was at the root of Warren's breaking away from the traditional definition of psychology for which he substitutes the following: "Psychology is the science which deals with the mutual interrelation between an organism and its environment"²—a definition which I should take exception to on three grounds: (a) it delimits more closely the range of biology than of psychology unless the two are to be identified; (b) it includes altogether too much, for when an individual shuts his eyes, stops up his ears and, resting his head on both his hands, lapses into a reverie, we cannot very well say that he is reacting to his immediate environment; (c) psychology is hardly concerned with the organism, for it is *not the biological unit which thinks, feels, perceives, wills, etc., but the psychological complex, the subject; hence*

² H. C. Warren: *Human Psychology* p. 13.

*the term "organism" is a misnomer when used in that connection.*³

There is a further objection against such definitions as make use of interrelations. They presuppose that the subject-matter of the science under consideration is the same as that of the *inter-relata*; that the difference consists merely in the linking of the data, just as in psycho-physics we have a connecting territory between psychology and physics or between psychology and physiology. In any case, the two terms which have been combined into one are primarily more fundamental as sciences than the correlating offshoot, but what have we to offer as the fundamental sciences which represent the *termini* "organism" and "environment"? If they are respectively biology and physics, then shall we not be forced to the conclusion that psychology is a special sort of biophysics, or perhaps physio-biology would be a better term? Again if the environment is not always physical, we are left with a surd on our hands which apparently does not fit into the grooves of any science except through a circular procedure.

Furthermore, once we become habituated to the practice of defining sciences in terms of interrelation, there will be no end to the number of departments of knowledge which could thus be drawn up. Why not have a separate branch for the mutual

³ *vide supra* p. 95.

interrelations between the nerve and the muscle, between water and land, between a machine and its products? That it is not customary to delimit sciences after this fashion can scarcely be disputed; and if we seek the reason, we shall find it possibly in the fact that generally the relations and interrelations are taken for granted, so that the addition of the second term, like environment, in the case of a definition for biology (psychology), sounds like a redundancy. An environment means nothing except in terms of an organism. The two are therefore inseparable concepts if not actual correlates.

The compromise position which a number of psychologists have assumed recently of including consciousness and motor activity under the general head of behavior strikes me as an extremely inadequate makeshift. To talk of conscious behavior as a species of behavior is to make the concept of behavior so all-embracing as to cause it to be shorn of all significance. Like Hegel's Being it is at once all and nothing. The science of behavior in which there is to be a line of continuity between the non-conscious activities and the conscious processes is analogous to a science of units which is to deal systematically with the dollar and the ampere, the meter and the pound, the volt and the I. Q. The reason why we have no such "crazy quilt" of science is that we recognize that all of these units have nothing in common except as symbols of measurements; and as symbols we have conceptu-

alized them under one head. The dollar is treated under economics, the ampere under electricity and the just noticeable difference under psychology. Yet it is demanded in these compromise circles that we combine motor activity and conscious activity under the same rubric as if the fundamental gap between the physical and the mental is not sufficiently great to preclude its being bridged by the verbal accident "behavior."

The thoroughgoing behaviorist, like Watson, is of course immune from this criticism, but it is the band of so-called behaviorists who would like to eat their cake by defining psychology in terms of behavior and at the same time keep it by clinging to the mental processes—it is they who need revising. Whatever defect there is to be found in the method of these psychologists, they cannot be said to be in the predicament of the celebrated beast of burden belonging to Buridan, that starved because he could not decide which of the two bundles of hay that were put before him he ought to take. Our shrewd psychologists say "Take both"; but is it not just about as bad to die of indigestion as it is to starve of inanition?

Before we clap our hands in approval of the endeavors on the part of our modern knights-errant to free Psychology from the narrow confines of introspection in which she is supposed to have been immured, it is needful to ascertain what other shelter is being provided for her. 'Tis true enough,

introspection alone can at most describe and classify the phenomena we experience, but can afford us no clue as to the 'why,' the inner motive of acts. A bit of inference injected into our psychology can do no harm when properly administered. Let us beware, however, of a system of psychology which is based almost wholly on interpretation and inference, like that of the various psychoanalytic schools, where hypothesis runs riot and interpretation plays havoc with facts.

The accurate description and proper classification of the phenomena experienced must take precedence over any search for their mechanism and motivation. The 'How' and the 'Why' presuppose the 'What'; and the 'What' in psychology cannot be discovered by any manner of reasoning.

Introspection admittedly does not constitute the alpha and omega of our science, but it must be regarded as its foundation. Psychology is still young, one might say, in its infancy. There are lacunae in everyone of the departments of what is commonly spoken of as general psychology; particularly is the affective field poverty-stricken in its data, but rather than enrich that sphere by drawing upon the vast reservoir of myth and fable in Freud's dominion, we might direct our attention to the experimental laboratory and the psychopathic wards for introspective data under the most varied conditions. It is in this field that behaviorism

offers us nothing but hypotheses, if it at all approaches the territory.

It is of course regrettable—and all introspectionists must feel the same way—that so much time is lost and so much energy wasted in the attempt to establish a single principle, say, relative to imagery. Perhaps too much has been made in the past of certain processes and effects that are of little theoretical, and much less of practical, value. The introspective zealot who spends three or four years investigating the course of the after-image is probably of the same cast of mind as the German professor who had made it his life work to study the active and passive voices in grammar, and as he lay on his death bed, his only regret was that he had not specialized in the active voice alone. Introspection which is unguided turns out to be an experiment on the experiment with no direct objective in view.

To be sure, psychology is not to direct its course in accordance with the demands of the man in the street. But there are other considerations and claims that cannot be so easily disregarded, for instance those of the psychiatrist and the psychopathologist who are eager for enlightenment on the nature of the feelings and the emotions, and who in their disappointment at the scantiness of material in the various text books must turn to the mass of speculation stated in categorical language

by the psychoanalysts. Plainly enough we cannot expect the academic psychological laboratory to work out all the solutions. Ever new fields, rich in mental phenomena, are being discovered that are entirely beyond the scope of the university. The psychopathic wards and hospitals for the insane should furnish psychology with the rough ore. The touchstone however should be applied by the trained psychologist. That is his undisputed right. The psychologist cannot hope to probe deeply unless he possesses breadth of view. In fact every bit of classification presupposes a survey of the entire range of objects to be classified. Hitherto, it must be admitted, there has been an unequal distribution of effort and interest which can readily be explained on historical grounds. The department of cognition, and the senses in particular, have been monopolizing the attention of laboratory investigators. Naturally the text books have been following the general trend of the researches actually carried out. For one reason, though not the only one, the departments of affection and volition have been so shabbily treated because the study of the senses lent itself more readily to examination: their physical correlates were more or less in evidence while the affective phenomena seemed to be so elusive that no sooner would you attend to the particular state than it changed to some other state. Accordingly the policy adopted by the introspectionists was apparently to explore the most ac-

cessible territory first without leaving a stone unturned. But this process, from the nature of the case, may go on till doomsday unless our sense of perspective intervenes and bids us strike a path in another, perhaps more important, direction.

The course of every science must be guided by some selective policy. Observations should be made and experiments carried on with the purpose in view of either proving or disproving a general law or tendency. Even were every man turned into a scientist, there would be no need of submitting every conceivable object to all possible tests. In fact the more we know of the composition of things, the less necessary do we find it to exhaust all the possible cases. We may rest contented with proper samplings relying on the laws of probability. The various statistical formulae help to conserve our time and energy. Bacon's strictly inductive doctrines are now more sterile and superannuated than ever.

In the case of mental phenomena, let it be recognized, not only on account of the diverse individual variations which occur but because of the practical importance of these variations, it is not so easy or advisable to apply the time- and labor-saving methods current in the physical and other natural sciences. The selective principle, however, holds just the same. To illustrate: though our information about the olfactory range of sensations is comparatively meager, one should hardly con-

sider it wise to spend a life time observing the exhaustion stages of all the odors known to man. On the other hand it might be profitable for commercial reasons to experiment exhaustively on all the possible combinations of odors for the purpose of eliciting a new sort of fusion. But even there where the purpose is rather to *invent a particular thing than to discover a general law*, the general scheme of classification both of the odors and the chemical composition of the odoriferous substance is our basis of orientation.

Pure introspection must give way to the demands of a motivation psychology which seeks to explain by going beyond the merely describable state of mind or experience. A slight portion of inference applied in the severest manner cannot but assist us in understanding a given phenomenon as well as help to obtain a psychological perspective. The danger, however, of misusing this instrument by injecting ingenious theories into our psychology, as the Freudians have been doing, immune to the factual verdict of common experience, is probably the main cause of introspectionist purism. Once you begin resorting to inference, you will not be able to draw the line without appearing arbitrary to yourself and to others. The vagueness that hangs like a thick mist over the discussions of the older treatises and text books is due in large part to the unbridled speculations of the individual writers. Consider the following sample taken at

random from Sir William Hamilton's *Philosophy of Perception*: "On the testimony of consciousness, and in the doctrine of an intuitive perception, the mind when a material existence is brought into relation with its organ of sense obtains two concomitant and immediate cognitions. Of these the one is the consciousness (sensation) of certain subjective modifications in us which we refer, as effects, to certain unknown powers, as causes in the external reality; the secondary qualities of body: the other is the consciousness (perception) of certain objective attributes in the external reality itself, as, or as in the relation to our sensible organism;—the primary qualities of body."⁴

An explanatory psychology making use of generalization and inference is a desideratum. Yet when of a number of psychologists each one pursues a method peculiar to himself, and on the strength of his individual experiences argues the operativeness of a particular principle, there must result then a veritable Babel of theories and principles.

'Tis with our judgments as our watches,—none
Go just alike, yet each believes his own.

In this respect the physical sciences are of course more auspiciously born and more firmly established in that all their materials are subject to rigorous laws of uniformity and that all the variables in a given substance can be determined mathematically.

⁴ *Philosophy of Sir William Hamilton* (O. W. Wright). 1860, sixth edit. P. 274.

The nearer, however, we approach the study of the mind, the more unfathomable become the variables both in respect to number and quantity, and the larger loom in our eyes the individual differences that make almost every person obey his own laws, largely due to his power of self-determination. The sex instinct we may say in general is more powerful than the acquisition instinct in man, yet it is possible to find people who either are congenitally endowed with a weaker sex "drive" than a "money" drive, or else have sublimated the one into the other. In the physical world, if a metal is discovered which is not a good conductor, we begin to harbor suspicions as to whether that new substance is really a metal. The unexpected predominance of one instinct over another, however, offers no cause for disputing even the normality of the individual, much less his characteristic humanness.

Freud's very commendable attempts to supply us with psychological explanations of mental phenomena suffers from the limitation just mentioned, viz., they are inapplicable in a great many cases; and in order to fit the facts they must be stretched and shrunk according to the occasion. The significance and validity of a law lies in its applicability to all the cases that come under its jurisdiction. Our predictability in the realm of psychology is so circumscribed particularly in the affective and volitional fields because of the practical impossibility of discovering all the factors involved.

On the other hand when we do manage to obtain a principle that may be said to guide our actions, and on the strength of which we may claim a certain predictability, it is forthwith pointed out that such a principle is too obvious. Both Spinoza and Hume, antipodes as they were in almost every respect, made a serious endeavor to establish the applicability of general laws of mental phenomena, the former on the basis of the universality of the mathematical method which tempted him to regard human actions and desires exactly as if he "were dealing with lines, planes and bodies,"⁵ the latter arguing from the "necessary and uniform principles of human nature."⁶ Unfortunately Hume's explanatory psychology does not explain, and Spinoza's geometrical psychology "showed nothing but the greatness and ingenuity of his intellect"—to use the very words Spinoza applied to Descartes.

The strength of modern psychology, in spite of behavioristic cavils, becomes apparent when we compare this characteristic passage from Hume's treatise with explanations of similar phenomena to be found in Ribot's treatise on the emotions or Wundt's text book: "'Tis a quality very observable in human nature, that any opposition which does not entirely discourage and intimidate us, has rather a contrary effect and inspires us with

⁵ B. Spinoza: *Ethics* (introduction to part III) Origin and Nature of the Emotions.

⁶ D. Hume: *A Treatise of Human Nature*, Book II, Section I.

a more than ordinary grandeur and magnanimity. In collecting our *forces* to overcome the opposition, we *invigorate the soul*, and give it an *elevation* with which otherwise it would never have been acquainted." ⁷

In the above quotation from Hume, it will be seen that only the introspective observation is worth while; the reason assigned is without value because some of the terms used have no psychological meaning. Shall we then be content with the mere observation? But a collection of observations cannot give us a science. The psychologist finds himself in a dilemma; for, to adapt a Kantian expression, it may be remarked that pure introspection without explanation is barren, while explanations introduced without reference to a definite mechanism are usually blind. Recourse then must be had to physiology in order to put our fingers on a mechanism that we know only imperfectly, it is true, but at least sufficiently to be able to conceive its workings. We must start, however, with mental phenomena and must strive to connect them wherever they make their appearance, whether in the laboratory, at home, in the theatre, or in church. Closer intercommunication among psychologists thus becomes an imperious necessity, for it is only by checking up our experiences through other people's experiences that we can hope to obtain a modicum of objectivity.

⁷ *loc. cit.* Section VIII (italics mine.)

Naturally the behaviorist is better off than the mentalist. He has no dilemma before him, *for he has nothing to explain*. Taking an introspective datum he shows merely how it would be possible to treat it in objective but indeterminate terms such as "adjustment", "reaction-patterns", "*conditioned reflexes*", "behavior cues" and the like. He suggests, he hints, proposes, affirms, projects, but he does not explain, much less can he predict except in a general way as a man in the street would.

We have heard the clever gibe about psychology first losing its soul, then its mind, then consciousness. It would be easy for psychology in an uncharitable mood to retort that not she but certain of her professed votaries have been the losers in this case, and that it is not much of a consolation to be left with mindless behavior in the place of the real article.

"So like to dreams
Are then the world's chief glories,
That the true are oft rejected
As the false, the false too often
Are mistaken for the true?
Is there then 'twixt one and the other
Such slight difference that a question
May arise at any moment
Which is true and which is false?
Are the original and the copy
So alike, that which is which
Oft the doubtful mind must ponder?"

Part V.
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APPENDICES.

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(Note) Warren's use of the word "mentalism" in this article as a synonym for psychical monism or idealism, in its ontological phase, is hardly acceptable, seeing that there are other suitable terms to serve that purpose (see *supra* p. 96 n.)

APPENDIX A.

(Note to Chapter XIII.)

INTELLIGENCE AND INTELLECT.

It is well known that certain words and terms make a greater appeal to the mind of the public than others. Psychologists are perhaps not to be included among the public, inasmuch as they, in common with all other scientists, are supposed to select their terms and not to allow themselves to be guided by ordinary usage. But try as one will, there are certain circumstances which rule over the fate of words and so bring it about that the one becomes a technical term and is discussed interminably in books and periodicals while the other, with just as high a pedigree, is relegated to the plane of popular parlance.

Such has happened with the two words "*intelligence*" and "*intellect*." Both are derived from a common source, *intelligere*, which, when analyzed into its components, means *to choose, to pick out* (and incidentally shows what good psychological insight the Romans were possessed of); both ran almost a parallel course since the days of the Renaissance, yet of the two, the term intelligence had the more eventful career, until it has even been made to turn a behavioristic somersault, while in-

tellest is still the staid and dignified entity as of old, and as a result, is doomed to the traditional treatment of lexicographers and literary men.

From the very first, the word intelligence had the advantage in its range of applicability. The distinction drawn between intelligence and intellect in the *Dictionary of Philosophy and Psychology* is not clear-cut, though the tendency "to apply the term intellect more especially to the capacity for conceptual thinking" is noted. The delineation of the same term in the *Encyclopedia Britannica* is carried out along similar lines. "A man is described as 'intellectual' generally because he is occupied with theory and principles rather than with practice, often with the further implication that his theories are concerned mainly with abstract matters; he is aloof from the world, and especially is a man of training and culture who cares little for the ordinary pleasures of sense." It must appear evident to most readers that such a description of the intellectual man does not provide us with the cues for discriminating between intelligence and intellect, and at the same time draws a too sharp antithesis between two qualities which may subsist in the same individual. Bismarck, though concerned with practical matters and not a theoretician, might have been an intellectual person, even if he did not actually happen to be such. Besides, until we were able to draw the line of cleavage between the theoretical and the practical, our cri-

terion would be of no avail. The same observation applies to the account in the *New International Encyclopedia* in which the intellectual man is said, according to current usage, to possess "special ability in dealing with the abstract and theoretical, while the intelligent man is efficient in concrete situations and practical affairs."

In his article on "Animal Intelligence" in the *Britannica*, Lloyd Morgan sets down the difference as one between *perceptual* (sensory) and *conceptual* (ideational) modes of behavior. This distinction was probably grounded in the results obtained in animal psychology, so that thanks to the labors of Romanes, the phrase "Animal Intelligence" became one of the most widely used expressions in psychology. But in spite of its empirical background, the phrase pointed to a particular interpretation which need not necessarily be accepted, and which, furthermore, was vigorously attacked by Wasmann and Mivart.

Prof. Warren seems to think that the term intelligence, as applied to animals in the eighties and nineties, had acquired a distinctly behavioristic meaning, and points out that Thorndike, in particular, applied it to his mazes and trick fastenings. Commenting on my discussion of the relation between intelligence and behavior,¹ he writes "I have, myself, the feeling that we could very profit-

¹ A. A. Roback, 'Intelligence and Behavior,' *Psychol. Review*, 1922, Vol. XXIX, p. 54ff.

ably revive this meaning so as to distinguish between intelligence and intellect; most of the modern mental tests are really intellect tests, that is, tests of intellectual intelligence as distinguished from the motor or skill intelligence tests which are applied to animals." It was this bit of comment which occasioned the writing of this paper, especially as there seems to be an ever-growing need of a criterion to determine which is intellect and which is intelligence, the more so because the two are regarded as correlative terms, which means that what we hold about the one will affect our view of the other, as is evidenced by the comparison of Lloyd Morgan's and Warren's views. If intellect refers to the conceptual, intelligence will involve the merely perceptual; and, if we take it that intelligence comprises all performance acts, our distinction will be one between the motor and sensory functions of man. In that case even a moron, inasmuch as he is able to assimilate knowledge, may be regarded as possessing intellect.

Probably every educated person employs the two words in slightly different connections. A highly cultured person, like Carlyle or Emerson would, in all likelihood, not feel flattered to be referred to as very intelligent. To the man in the street such a recommendation would no doubt appeal as an acceptable compliment. Intelligence and intellect seem to be made of the same texture, but differ in their degree of complexity. This dis-

tion, however, is not always recognized by psychologists. Thus, Thorndike in his *Animal Intelligence* speaks of animal intellect² as evidently an interchangeable mode of expression for animal intelligence, while most intelligence testers, as Warren observes, are really occupying themselves, to a considerable extent, with the problem of determining the intellect of their examinees. Largely with this consideration in view, I have been impelled to call my own series of tests for superior adults "mentality tests," and have explained elsewhere my reason for so doing, viz., that "intelligence" has been used to "designate a much more comprehensive state of affairs. Social tact and *savoir faire*, as well as mechanical ingenuity and motor coördination, are all subsumed under the general category of intelligence. It is obvious, however, that what we can concern ourselves with here is at most the analysis of situations that are distinctly of a non-social and non-mechanical sort."³

The distinction between intelligence and intellect is a very genuine one, but it does not strike me that the essential difference lies in the fact that the one characterizes motor skill or even mechanical ingenuity and the other applies to abstract reasoning. To be sure, the term animal intelligence was

² E. L. Thorndike, *Animal Intelligence* (1911), preface p. v. and Chapter VII.

³ 'Report on the Roback Mentality Tests at Simmons College,' *Simmons College Review*, 1921, Vol. III, p. 314.

in vogue among animal psychologists for a long time to designate the capacity for motor learning in infra-human subjects, but in all such cases it is my belief that the aim of the investigators was to prove that *animals possessed mind, that they were capable of understanding situations*. Such was certainly true of Romanes and Wesley Mills. The substitution of the term animal behavior for animal intelligence was due in large part to the realization that we are on slippery ground whenever the question of interpreting the mental state of an animal crops up. No assumptions are necessary—and one might add no general conclusions are forthcoming—on the basis of an animal-behavior psychology. Another reason for the shift of terms is probably the desire to break down the barrier between animal psychology and biology so that workers in the two fields might carry on their pursuits on common ground. Thorndike's book under the title of *Animal Intelligence*, which came out in 1911, was, it will be remembered, an amplification of his monograph published in 1898, when the term behavior, used in connection with animal reactions, was still waiting for Jennings, a biologist, to give it currency. Hence the somewhat conservative caption to a book which really was an influential factor in modifying the older views about animal intelligence.

The distinction then between intelligence and intellect does not appear to be primarily one be-

tween motor capacity and the power of abstraction. Intelligence is more inclusive than intellect, but, at the same time, it is marked by a certain desultoriness. It may appear in detached form. This view does not necessarily argue for the multimodality of intelligence. An individual may meet with success in almost everything he undertakes to do and yet not be classed with the intellectual. What is it then that gives one the stamp of intellect? It is, to my mind, the *concatenation of the most essential intelligences into a systematic whole*—most essential for that purpose, of course—that constitutes the distinguishing feature of intellect. This quality must not be confused with what has been called creative intelligence, for a great artist or a great inventor is not necessarily a man of great intellect, nor must the distinction be viewed in the light of Stern's proper dichotomy between genius and intelligence.⁴ That mental integrity constitutes a prime condition of intellect is, to a large extent, recognized in popular parlance when we speak of Aristotle *being* a great intellect, though an ordinary man is said to *possess* intelligence. This usage is not a mere synecdoche, but represents the deep-rooted conviction of educated people which experience has taught them. Cæsar was probably more intelligent than Marcus Aurelius, but Marcus Aurelius was the greater intellect. A man may get along with people, who nevertheless is unable to

⁴ W. Stern, *Psychological Methods of Testing Intelligence*, p. 4.

understand them or appraise their merits and faults. Another may not be so successful in his dealings with the world and yet have a keener insight into affairs. The latter is the more intellectual. It is he who not only grasps a situation, though not necessarily every situation, but is also able to relate his experiences and observations to one another so as to build up a *Weltanschauung* (which need not be a system of philosophy). Paradoxical as the statement may sound, it is my belief that there are cases when one knows how things are done without being able to do them himself. An intellectual man, then, will not always be thought intelligent in the accepted sense of the word, for his capacity will not comprise possibly the wide range of activities covered by intelligence, but by way of compensation, he has a great deal more to show in the upper levels of the narrower range—upper because the activities in that region presuppose a knowledge of the more common activities. The intelligent man lives in a shed extending over a vast area; the man of intellect dwells in a skyscraper, communicating with every nook and corner of the building and aware of every happening in his abode and its bearing upon every other happening.

In short, the secret of intellect is *coördination* on a large scale. Naturally, the experiences requisite for such an activity must be plentiful, comprising not only one's own but those of many others. For

this reason erudition has been considered the basis of intellect, and rightly so. The perfect type of coördination would involve an acquaintance with all the facts in every conceivable department of knowledge. The more data we have at our command in the most diverse fields of human endeavor, covering the greatest period of time, the more we approximate this ideal. It does not follow that the professional philosopher is the man of intellect *par excellence*, though his particular studies must surely provide him with the best opportunity for such attainment. Herder, Schopenhauer, Carlyle, and Renan, disparate as they all are from one another, seem to typify the intellectual in modern times. In general one may say that the romanticists have the advantage over the classicists in this regard because their scope extends over greater dimensions. The quality of the coördination is probably superior in the latter, but as has already been intimated, no matter how careful we are with our selection, if the wherewithals are not within our reach, the choice of the materials cannot but be faulty.

The statement has been made above, and it accords with the received view, that intelligence is a more comprehensive term than intellect. But the subsequent discussion goes to show that this comprehensiveness relates to the *situations to be met with by the individual*. Now a great many of these situations are not taken into account in the ad-

judication of intellect, but vastly more is included instead, to wit, *the experience of the race* and its outstanding figures. The man of intellect is not called upon to settle a strike, to repair a lock, to act the affable host and the like; his task is much more enormous, for he deals with a vast body of complicated facts which he must sift and colligate and reflect on.

After setting down the criterion of intellect and intelligence, we have still to consider the constitutional difference between the two. In the man of intellect there appears to be an *urge towards systematization* which, if not lacking, is at any rate not pronounced in the intelligent person, who, to be sure, may evince an ambitious spirit, may even direct all his energies towards becoming a leader. In such an individual the "drive" towards his goal may be actually consummated, but often the means employed, the very skill exercised, betrays the want of mental integrity which is a *proprium* of intellect. The fact that single-mindedness was not always a characteristic of intellectual men—Voltaire, for instance—should not invalidate my thesis. As in everything else, deviations from a standard are to be measured in relation to the components which go to make up the criterion and treated, moreover, on a comparative basis. The flaw in Voltaire's character must indubitably have affected not only his results but his coördinating ability as well.

APPENDIX B.

HOW IS PSYCHOLOGY TO BE DEFINED?

Before attempting to approach this question it is necessary to ask ourselves, as some skeptical critics most likely will do, whether psychology needs defining. There is more than one practical scientist who doubts the value of definitions altogether. We hear it often said that some concepts are indefinable; and the various definitions of "consciousness", "life", "the good", "matter", etc., framed by philosophers and scientists during the last century would tend to establish the truth of the oft-repeated statement. And yet definitions are necessary evils in scientific procedure. Were we unable to resort to a definition in times of doubt or controversy, language would be of little advantage to us in the communication of abstract notions.

We must, moreover, recognize a certain difference between what is usually called a fundamental fact, such as life or consciousness, and a selected body of facts which we choose to subsume under a particular science. The former is *imposed* on us, and even a savage makes the distinction between life and death, consciousness and unconsciousness. The latter, however, is *created* by the scientist who must naturally be led by some guiding principle in the selection both of his field and the data which go to

make up that field. This guiding principle involves in the last analysis some sort of definition. If the scientist were not bound to demarcate his province, he would be obliged either to cover the whole range of human knowledge or else to treat promiscuously under one rubric such remote fields as philology and astronomy.

But let us suppose that it were possible to tell the student or the lay inquirer that psychology is the science which deals with "such things as sensations, images, feelings, thoughts, etc.", it would then devolve on the informant, in the first place, to enumerate all "those things" exhaustively without the privilege of using the blanket phrase "etc." which, in the absence of a definition, cannot mean more than a sound except to those who are sufficiently cultivated to grasp implicitly the superordinate class to which belong sensations, images, perceptions and the like. The uncultivated mind, on the other hand, would not only miss the reason why psychology cannot deal with kings and cabbages as well as with sensations, feelings and perceptions, but would even find it difficult to grasp the meaning of the latter terms, unless he is supplied with the principle differentiating these from other terms. In other words, the *further explanation that perceptions and feelings are mental becomes a prerequisite* to the understanding of the subject-matter of psychology; and what is this qualifier but a subterfuge for a definition *per genus et differentiam*?

In spite of all endeavors to evade the issue, an undefined psychology must end in chaos. To say what psychology is about implies either tacitly or explicitly its definition; and all we contend here is that in speaking about psychology one must be able to tell what it deals with. Formal definitions are not required.

The subject of definition in psychology has seldom been treated seriously in the literature. To be sure, there is no dearth of definitions ranging from the time-honored soul mystification to the curious circular, and therefore even more mystifying, definition which states that psychology is the science in which psychologists are interested. To my knowledge, the only one who has invested the subject with the thoroughness worthy of a philosophical critic was the acute though ponderous Swiss thinker Richard Avenarius.¹ And since neither James Ward nor Calkins, both of whom have written on the same topic, mentions Avenarius's discussion, tucked away in a German periodical more than a generation ago, it may be of some advantage to consider here the latter's main conclusion.

After passing in review all the various definitions of psychology that were current in his time and submitting them to a rigorous test, he dismisses them one after another as futile. In his quest for the object of psychology, Avenarius finds three

¹ R. Avenarius: 'Bemerkungen zum Begriff des Gegenstandes der Psychologie'. *Vierteljahrsschrift für wissenschaftliche Philosophie*, 1894, vol. XVIII, 1895, vol. XIX. (4 articles.)

types of conceptions. The first, that of naïve empiricism, is the primitive notion that psychology is concerned with the soul. The second type he curiously dubs naïve criticism. This in its turn may be subdivided into three different groups of views: (a) the representation of psychology as dealing with *psychic* or *mental* 'functions', 'states', 'facts,' or 'phenomena', etc., (b) the belief that psychology is the study of 'functions', 'states', 'facts', 'manifestations' or 'phenomena' of *consciousness*; (c) the envisagement of psychology as examining the data of 'inner life' or the 'facts of the inner sense', or 'inner experience', 'inner perception', 'the states and processes *in us*', 'the inner process', 'the immediate', etc., etc.

The purely animistic view he discards as meaningless, unless soul is to be merely identified with experience. The three sets of naïvely critical views lose their value for him because of the dualism they presuppose. Since Avenarius would recognize no distinction between the 'inner' and 'outer' phases of experience, any doctrine which savors of such a dichotomy must be relegated to the sphere of fiction.

What then is the scope of psychology? In the view of Avenarius it is experience, experience in general; or more fully, it may be said, that psychology deals with *experience in general as depending on the central nervous system of the individual*.

Avenarius takes care to note that there are two components involved in general or complete ex-

perience, (a) the central member corresponding to the nervous system and (b) its complement, the environment. It is here that we really have the germ of behaviorism, for when broken up in behavioristic language, Avenarius's "complete experience" reduces to stimulus and response.

There are of course partial experiences too which form the subject-matter of the other sciences. These partial experiences are divided up *vertically* into: A, elements and complexes (corresponding to what we now call sensations and perceptions), B, characters (such as the feelings); and *horizontally* into: I, substances and II, ideas. Incidentally, the other sciences in dealing with special phases of partial experience tend to widen and simplify the *content* of experience in its complete form, thereby contributing materially to the development of psychology.

Every partial experience may come within the scope of psychology as soon as it is brought into relation with an experienter. It is, in other words, *its dependence on some individual* which makes even the movement of the leaves part of the subject-matter of psychology. As soon as the relation of dependence is severed, the psychological aspect is removed, and the tree or the leaves become an object for botany.

Feelings and ideas, since they are always inseparable from a "feeler" or "thinker" must always be recognized as objects for psychology alone. We

may then regard the idea of a centaur, the concept of Platonic Ideas, not the centaur itself or the ideas themselves, as entering within the scope of psychology; for they partake of the nature of experience and are conditioned by the thinking individual.

It is not necessary to present here the substance of the Swiss philosopher's further articles on this subject, which are in the main attempted refutations of the traditional division of phenomena into physical and mental. From the brief exposition presented in these pages it will be seen at least why Avenarius has chosen to define psychology as the science of experience in general as dependent on system C.

For other reasons than those of Avenarius, James Ward is partial to the "experience" definition of psychology, flavored in addition with an animistic "subject". In an article² which afterwards formed the first chapter of his *Psychological Principles*, Ward draws up several objections against the view that psychology is concerned with consciousness. First, there is the confusion between consciousness and self-consciousness. Secondly not all that is experienced is in consciousness; for, claims Ward, "a mouse, for example, feels and strives: feeling and striving are factors of its experience, but they are not objects of its knowledge". Similarly "the adept is no longer conscious of the painstaking

² J. Ward: 'On the Definition of Psychology,' *British Journal of Psychol.* 1904, vol. I.

efforts by which he first acquired his skill, and the tyro is not yet conscious of the differences to which, as a connoisseur, he will come to attend". Still another objection points out that we cannot say "My consciousness remembers or desires", but invariably use the term "I". Hence the activity is ascribed to the "subject" of experience, and not to consciousness.

With greater consistency than is displayed by Ward, Calkins urges that psychology can be defined properly only as the science of self.³ She is willing to accept the definition of psychology as the science of consciousness provided by the latter term is meant the "conscious self". Her argument rests principally on what she considers to be the inseparable attachment of either the elements or the functions of consciousness to a person. The question, "*Whose* consciousness?", "*Whose* mental functions?" is to her paramount.

The self, as she understands it, is not psychophysical. It is related to a body, though it does not include the body,⁴ and seems to answer fairly well to the popular conception of the term. In a subsequent paper⁵ she proceeds to describe the characteristics of the self, which consist of (a) per-

³ M. W. Calkins: 'Psychology: What Is It About?' *Journ. of Philos. Psychol. & Sci. Methods*, 1907, vol. IV.

⁴ M. W. Calkins: 'Psychology as Science of Self—I. Is the Self Body or Has It Body?' *Journ. of Philos. Psychol. & Sci. Methods*, 1908, vol. V.

⁵ M. W. Calkins: 'Psychology as Science of Self—II. The Nature of the Self', *loc. cit.*

sistence, (b) inclusiveness, (c) uniqueness or individuality, and (d) relatedness.

Much as one is tempted to fully analyze each of the objections to the more or less accepted definition of our science, I fear that to do the subject justice would lead us into the bottomless depths of philosophical controversy. The most expedient course is simply to point out the main issues in the difficulty, indicating the weak spots in the objectors' views.

Avenarius wishing to avoid the dualistic solution claimed that the object of psychology is undifferentiated experience which, as a result of a pernicious introjection, has been divided up into mental and physical entities. But to begin with, no amount of enlightenment can persuade us that there is not a *fundamental* difference *introspectively*—and what other appeal can we have?—between the *tree-out-there* and the tree I am merely thinking of. Avenarius himself recognizes the gulf, though he does not consider it unbridgeable. Secondly, the empirio-criticist glosses over the fact that *all* sciences deal with experience. Botany and zoölogy, for instance, are concerned with experience in the same degree as psychology; and what is more, this experience is similarly dependent on system C; for the innumerable observations of the botanist cannot take place without the aid of his nervous system. Thirdly, the word *experience* in a generic sense should include not only what happens to a nervous system but even the *faring of inanimate things*.

The melting of the snow is an experience in the etymological sense inasmuch as the snow underwent change. Of course we do not usually think of it in this way, because *experience is always associated in the popular mind with the feelings of pleasure and discomfort*. In other words, it is not the nervous system as such which lends character to a particular event so as to be called an experience, but the *consciousness attending the event*. Whether a person can, with any justification, talk of experiences sensed during a dreamless sleep or while under an anaesthetic is scarcely a debatable question.

The term experience is by no means so free from ambiguity as is sometimes imagined. Kant, as is well known, subsumed under the word not only what is ordinarily recognized as experience, but even that which came from the pure understanding, the intuitions of space and time and the *a priori* categories, for instance, which were supposed to be the conditions of all *empirical* experience.

What Avenarius has failed to explain also is the need of creating a new science to study the experiences depending on the nervous system, while the experiences conditioned by the circulatory and respiratory systems must be doomed to comparative insignificance. Is not the importance of the system C experiences derived from the circumstance that they are accompanied by consciousness in some form or degree? And if consciousness is that which makes an experience worthy of the name, then why

bother about the nondescript genus? Instead of defining psychology as the science of experience in its relatedness to a nervous system, it would be more apposite to say that it is the science of *conscious* experiences or, what amounts to the same thing, *consciousness*, however faint or dim.

Ward's position as to the object of psychology is not clearly formulated. If he favors the experience definition, he lays himself open in part to the same criticism as Avenarius. Ward too does not stop to consider that the word *experience* is no more definite in its delimitation than the term *consciousness*. There are all grades of experiences just as there are all shades of consciousness. Ward's illustration of the adept being no longer conscious of his painstaking efforts seems somewhat trivial, for in a similar manner may it be said that the experient no longer experiences those *Erlebnisse* which he has already experienced in the past; and if past experiences may still come within the range of psychology, the same privilege must be accorded to past consciousnesses.

Once we admit that consciousness includes every state short of the absolutely unconscious, Ward's difficulty about the striving mouse is overcome. The mouse does not need to be self-conscious in order to be conscious of a problem or danger. Surely its striving and desiring enter as factors into its *consciousness* just as they do in its *experience*.

The most significant of Ward's objections to a

definition which makes consciousness the object of psychology really coincides with Calkins's main argument. In short the objection revives the old question which Hume raised in his *Treatise of Human Nature* about personal identity.⁶ Kant, it will be remembered, had to cope with the same problem, viz., how anything can be known, compared, remembered, etc., without there being a knower, a permanent agency which, both Ward and Calkins would contend, is the object of psychology. Kant was led to suppose that the synthetic unity of apperception was a condition of all perception, but he did not think of this Transcendental Ego as a temporally permanent self as does Calkins, but rather as an agency which comes into being simultaneously with every sensation.

This most complicated problem gave no end of difficulty to philosophers in the past—a fact which in itself should debar it from being made the object of psychology—and numerous arguments may be adduced to bolster up either side (associationism and animism), but whether we agree with James's settlement of the issue ("Each thought is thus born an owner, and dies owned, transmitting whatever it realized as its self to its own later proprietor"),⁷ or accept some condensation (*Verdichtung*) theory like that of Lazarus,⁸ it is easily seen that the obstacle is not insuperable.

⁶ D. Hume: *A Treatise of Human Nature*, book I, sec. VI.

⁷ W. James: *Principles of Psychology*, vol. I, p. 330 ff.

⁸ M. Lazarus: *Das Leben der Seele*, vol. II, p. 229 ff. (3rd. ed.).

Aside from the debatable question whether or not we are introspectively aware of a self, there is a great deal to restrain us from subscribing to Calkins's main doctrine. To speak of a permanent self which is the object of psychology is to commit oneself to a purely idealistic conception of psychology, for permanence presupposes substantiality. Now every science ought to be able to steer clear of metaphysical controversy, and psychology should not be an exception.

Were we to adopt Calkins's definition, we should be giving up a great deal for very little return. Of all the characteristics which are ascribed to the self, the only one that consciousness in general lacks is permanence. But it surely is asking too much to swing a whole science on this one solitary hinge.

This point ought to be expanded, for it contains far more than may be *prima facie* supposed. The argument may be presented in some such form as this: There is a fundamental difference between permanence and change, so that the self *qua* self cannot at the same time be both permanent and changing. This should imply that if the object of psychology is the self, there would have to be created another science to deal with the stream of consciousness which, by its very nature, is *toto cælo* different from the permanent and therefore *substantial* self. Probably this mode of reasoning was at the bottom of Wolff's division of psychology into a rational and an empirical part. Kant more clearly recognized

the vast distinction between what he called the Transcendental Ego and the Empirical Ego.

It should be realized that the belief in the perdurance of matter does not offer the same handicap because the *quantitative constancy* of the mass constitutes the basis for such a conviction, while as regards the persistent identity of an object, we can only accept Hume's disposition of the case, viz., that the principle of individuation is, if not arbitrary, at least relative or comparative. The acumen of Hume's analysis of the principle of individuation and identity is, it seems to me, not only formally unimpeachable but his conclusion may be regarded as an anticipation of the relativity theory as applied to this special phase.

The identity of the self must, however, be conceived as an absolute identity, for the reason that it cannot be said to depend on anything else in nature, and yet its constancy cannot be measured in terms of mass.

I am not arguing here against the possible permanence of the self, but am concerned only to show that either empirical psychology ought not be forced to study this self which is at best a speculative hypothesis, or else that we find a new name for the science which hitherto has been known as psychology.

There are a number of other problems that confront the self psychologist. To begin with, when does the self appear first? Is it ascribable to the

new-born infant? How do the phenomena of multiple personality and depersonalization square with the doctrine of a permanent self? Does the self grow with the growth of self-consciousness; and if so, what is there about the self which does not change? Have animals a permanent self too, and if not at what evolutionary stage did it come into being? How about collective psychology? Has the collective self a permanent basis?

But this is not the place for challenging the doctrine of a permanent self. The "subject" or active agent of consciousness may easily be a fundamental concept, even a requisite; but it is something beyond the scope of psychology except in its relation to metaphysics.

The sum of the matter is this: Search as we may for better definitions of psychology we shall have to wait a long time before we could with reason supplant the generally accepted one. The only platform which idealists and realists (yes, and even materialists) have been able to agree upon for several generations was the cleavage of phenomena into mental and physical. To say with Avenarius that experience as dependent on system C is the object of psychology would preclude the possibility of ever viewing plant response from a psychological angle, in spite of the fact that the celebrated Fechner⁹ has several decades ago argued in favor of a

⁹ G. T. Fechner: *Nanna*.

plant consciousness, giving illustration after illustration to substantiate his view. What if it should be proven that the behavior of certain plants is essentially the same as that of certain lower organisms, would not Avenarius's definition have to be revised?

Calkins's definition seems to presuppose a division of the world into self and not-self, but since every *person other than the speaker is a "not-self" to him*, it follows that psychology deals with "myself" only. Psychology thus cannot be a science of selves, but a solipsistic discipline. We must not forget that the characteristic mark of the self is not its permanence so much as its uniqueness. Consciousness is a more objective term. Though other people's conscious states are not directly accessible to us, mind or consciousness, which is a moment of mind, may be represented as a genus. The self is consciousness individualized, whereas consciousness, though it always occurs in an individual, may be depersonalized when treated as the subject-matter of a science. And therein lies the strength of the general text book definition of psychology.

Nor is it necessary to introduce the qualifier "as exhibited through behavior" after the word "mind" or "consciousness" in the ordinary definition. Instead of clarifying the issue, this phrase serves rather to obscure it; for if by behavior is meant movements and processes objectively observable, to the exclusion of all mental phenomena subjectively

experienced, like the emotions, perceptions, impulses and the like, we should be putting the cart before the horse, seeing that these subjective experiences afford us the only clue for interpreting the various objective observations. This procedure would be like cutting the trunk of a tree and then trying to reconstruct a trunk which would dovetail with all the cut branches.

If, on the other hand, the term behavior is employed in so wide a sense as to include introspection, then why make use of the ampliative clause when it does not make a particle of difference in the delimitation of the phenomena whether you include the words "as exhibited by behavior" or not, since it is self-evident that consciousness must be manifested at least somehow? At all events the clause in question is of doubtful value, for its inclusion either tends to frustrate the aim of psychology or else it is a useless tautology, in either case, according to the sense in which the term "behavior" is taken, invalidating the proposed emendation.

APPENDIX C.

CLASSIFICATION OF BEHAVIORISTIC SCHOOLS.

It is no easy task to tabulate the different classes of behaviorists, and were it not for the fact that the usefulness of such a chart counterbalances the difficulty of its construction, I should leave it to the readers to systematize the behavioristic movement. My own classification will of course be open to criticism, just as any other classification would on the usual counts of overlapping, indistinct boundaries, omissions, etc. My plea is that many of the behaviorists are not consistent and keep changing their point of view, sometimes even from article to article. To photograph psychologically such a person is next to impossible. Dunlap for instance has swung over from a positive anti-introspectionism to a positive anti-behaviorism. Others again who label themselves behaviorists are such in name only. In this category belong Calkins and Tawney. McDougall's renouncement of his earlier definition of psychology takes him out of the behaviorist class entirely, and yet his psychological system has not changed notwithstanding this revision. The hybrid psychologies of Warren, Pillsbury and others can be considered only as nominal behaviorism.

Some again like Holt will have to be placed

under two or three different rubrics because they combine several different points of view or else have been led to flavor their product with different ingredients.

The names of the classes are in most cases self-explanatory. The demarcations depend on the following factors mixed in varying proportions:

- (a) the range of the environment or scope of the stimuli said to enter into a given situation;
- (b) the parts and functions of the organism considered essential to the response;
- (c) the degree of significance attached to the fact of consciousness;
- (d) the particular starting-point from which the writer sets out;
- (e) the combination of behaviorism with another general point of view.

Although behaviorism is essentially an offshoot of the functional point of view, it need not surprise us to find in our relativistic world that nearly all the classes of traditional psychology will fit the behavioristic divisions. Those who stress physiological mechanisms or their very opponents who may talk of a behavior-cue and a behavior-object are structuralists as compared with the decided functionalists of the bio-sociological (De Laguna, Parmelee) and pragmatist wings (Bawden, Bode). The term "adjustment" which is common to all of the behaviorisms acquires a slightly different meaning with each of the various factions. In one, the emphasis is on the environment; in another it is on the organism; in still another, adjustment centers about a futurity relation.

The nominal behaviorists show much less homogeneity than the strict behaviorists who present a more unified scheme, on the positive side, in recognizing only the stimulus-response relation, and on the negative in reducing to a minimum the discussion of mental states, if not eliminating it altogether.

The appended chart is designed only as a convenient scheme by which the various schools of behaviorists may be differentiated, and should serve as a basis for further classification in the future. The divisions, especially the dichotomy of structural and functional behaviorism, will very likely not be accepted universally, but since I have stated the general principles upon which the classification is based and have also given the specific *differentiae* of the divisions, the onus of uniting some of the factions will fall upon the objectors.

The bracketing of a name in the chart indicates that there is a difficulty attached to the inclusion of the bracketed writer under a specific rubric, largely because of a contradictory phase in his scientific or philosophical make-up.

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